



**REPORT**

**WORKING GROUP ON  
COMMUNICABLE AND NON - COMMUNICABLE  
DISEASES**

**FOR  
THE ELEVENTH FIVE YEAR PLAN**

*September 2006*

**Chairperson :**

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Government of India**



## PREFACE

The Planning Commission, Government of India as part of an exercise for the formulation of the Eleventh Five Year Plan (2007-12) in Health & Family Welfare sector set up a **working group on Communicable and Non-Communicable Diseases** under the chairmanship of the undersigned. The terms of references broadly included estimation of disease burden, review of the status of on-going programmes, identifying priority areas for basic clinical, applied and operational research during Eleventh Plan period and to suggest mechanism for meeting health care cost for management of communicable and non-communicable diseases at different levels.

In order to facilitate deliberations of the Working Group three sub groups were constituted to deal with areas of communicable diseases and non-communicable diseases and research & development. The conveners of the sub groups were authorized to co-opt any expert in consultation with the Chairman for the purpose of preparation of reports of sub groups. In addition to the members of the Working Group nominated by the Planning Commission, programme officers from Centre and State, experts from Directorate General of Health Services, Indian Council of Medical Research, All India Institute of Medical Sciences and other leading health institutions from different parts of the Country were co-opted to participate in the discussion.

I am thankful to all the members of the working group and the co-opted members for the keen interest taken in the deliberations and discussions, which enabled the group to finalise its report on time.

(Dr R K Srivastava)

Chairperson

NEW DELHI,

8<sup>th</sup> September 2006

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# EXECUTIVE SUMMARY



## EXECUTIVE SUMMARY

India is a large country with around one billion population in 28 states and 7 union territories. Historically India has a rich public health system as evidenced from the relics of Indus valley civilization demonstrating a holistic approach towards care of human and disease. The same declined through the successive invasion through the centuries, intrusion of modern culture and growing contamination of soil, air and water from population growth. Around Independence, the status of public health was low as shown through high rates of infant and under 5 mortality, high fertility rate and from low life expectancy. The first major review of Indian health care delivery system by Sir Joseph Shore in 1943-46 and implementation of some of its recommendations led to development of public health care infrastructure including medical colleges during the subsequent decades. Eradication of smallpox and Guinea worm disease and elimination of leprosy and yaws are success stories from health sector. Poliomyelitis is on the verge of eradication. Other vaccine preventable diseases are on decline. Despite these successes, country is presently facing triple burden of diseases:

1. Unfinished agenda of communicable diseases: Diseases like malaria, kala-azar, other vector borne diseases, cholera, diarrhoeal diseases, leptospirosis, plague, avian influenza etc. continue to pose problem and outbreaks of these diseases are reported from various parts of the country. Microbial resistance is emerging as a big problem.
2. Emergence of non-communicable diseases: Non-communicable diseases like coronary artery disease, diabetes, hypertension, cancer etc. are on the rise due to change in life style.
3. Emergence of new infections: During last three decades thirty new pathogens have been identified world over. HIV, SARS, Ebola, Nipah, Marburg, V.cholerae 0139, Hepatitis C virus are example of such pathogens.

Besides above problems, profile of different diseases is also changing. Increasing trend in *P. falciparum* malaria cases resulted in in-significant decline in deaths during last ten years. Urban - rural distribution of malaria cases is reversing like in Tamil Nadu. Chloroquine and insecticide resistance is also increasing. Dengue, which used to be predominantly urban problem, now causes cases and outbreaks from rural areas. DHF cases and outbreaks are also increasing. HIV, which earlier was confined to high-risk population, has now spread to rural areas. HIV-TB co-infection is also emerging as a public health problem. Intentional use of microbes by terrorist organizations is also posing a threat to the public health. In this context bio-security and bio-safety measures need urgent attention.

Though phenomenal gains have been made in the health status of the people has seen "increase in life expectancy, reduction in infant mortality, death rate and fertility rate, yet much more needs to be done to improve the quality of the life of the people



for meeting the challenges of new, emerging and reemerging pathogens and also raising morbidity and mortality from non communicable and lifestyle-related diseases.

Exhaustive review of the available literature brought forth two factors of critical importance to public policy: (a) for almost all diseases conditions identified, and more particularly the National Health Programmes in which government investment was substantial namely malarial and other vector-borne diseases TB, leprosy, reproductive health and childhood conditions, there is a paucity of high-quality epidemiological information and validate data. In the absence of operational research there was also weak evidence regarding the type of interventions that would be most cost-effective in the different settings in the country; and (b) a literature review threw up evidence of a large number of diseases which were considered to be life style related and affecting the rich were seen to be affecting the poor as well, and increasingly so.

Life style and behavioral pattern of people are changing rapidly, favouring the onset of chronic diseases. The impact of these diseases in terms of loss of lives, disablement, poverty and economic loss is enormous. India have taken appropriate steps to avoid the epidemics of non-communicable diseases. National Goiter Programme initiated in 1962 is the oldest central sector scheme for the control of non-communicable diseases. Subsequently, National Cancer Control Programme and programme against micronutrient malnutrition etc. were started. Later on pilot projects e.g. cardio-vascular disease control programme, oral health programme, medical rehabilitation etc. were also initiated.

During 10th Plan Period, Government of India has taken two major initiatives in the health sector. The one of the initiative is National Rural Health Mission (NRHM), which was launched in April 2005 to provide effective health care rural population throughout the country with special focus on 18 states, which have weak public health indicators and/or weak infrastructure. The mission also aims at effective integration of health concerns with determinants of health like sanitation and hygiene and nutrition and safe drinking water through a district plan for health. It also has a strong component for strengthening of health infrastructure, capacity building, public-private partnership and decentralized planning. The mission is conceived as an umbrella programme subsuming the existing programmes of health and family welfare, including RCH-II National Disease control Programmes for Malaria, TB, HIV/AIDS, kala-azar, filaria, blindness & iodine deficiency. Other initiative is World Bank assisted Integrated Disease Surveillance Project (IDSP), which cuts across all the public health programmes as surveillance is the backbone for public health.



## COMMUNICABLE DISEASES

### 1. NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME

Vector borne diseases, viz., Malaria, Filariasis, Kala-azar, Dengue and Japanese Encephalitis (JE) are major public health concerns and impede socio-economic development. The National Health Policy has set the goals for reduction of mortality on account of malaria and other vector borne diseases by 50% by year 2010; elimination of Kala-azar by year 2010 and elimination of Lymphatic Filariasis (LF) by year 2015. Efforts are being intensified under the National Rural Health Mission by improving access to quality health care, empowerment and ownership at grassroots and inter-sectoral convergence. Achievement of the NHP goals would contribute to the realization of Millennium Development Goals of halting and reversing the incidence of malaria by the year 2015 as well as others in relation to eradication of extreme poverty and hunger.

The National Malaria Control Programme (NMCP) launched in 1953 for malaria control was modified to National Malaria Eradication Programme (NMEP) in 1958. However, the gains due to NMEP could not be sustained for various technical and administrative constraints resulting in resurgence of malaria in 1976 with over 6.5 million cases. This led to launch or modified plan of operations (MPO) in 1977. Since then, there has been reduction in reported annual incidence of malaria. The programme was renamed as National Anti-Malaria Programme (NAMP) during year 1998 and since 2003, with the convergence of prevention and control of other vector borne diseases; the NAMP is termed as National Vector Borne Disease Control Programme. Under the umbrella of NVBDCP, three-pronged strategies are being implemented, namely, disease management including early case detection and prompt treatment, strengthening of referral services; integrated vector management including Indoor Residual Spraying, use of insecticide treated bed nets and larvivorous fish and supportive interventions like human resource development, behaviour change communication, public private partnership, monitoring & evaluation, operational research.

Presently, the malaria incidence is around 1.80 million cases and deaths below 1000. About 80% of malaria cases and deaths are reported from Northeastern (NE) states, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Andhra Pradesh, Maharashtra, Gujarat and Rajasthan, West Bengal and Karnataka. However, other states are also vulnerable and have local and focal outbreaks. Resistance in *Plasmodium falciparum* to Chloroquine is an area of concern. Artesunate Combination Therapy has been introduced in such areas as first line treatment.

To combat malaria in urban areas, an Urban Malaria Scheme (UMS) was launched in 1971. Currently, UMS is being implemented in 131 towns/cities.

To achieve elimination of LF, the Govt of India has launched nationwide annual Mass Drug Administration (MDA) with annual single recommended dose of DEC



tablets in addition to scaling up home based foot care and hydrocele operation. In 2005, 229 endemic districts implemented MDA targeting a population of about 450 million with a coverage rate of 80%.

Kala-azar is endemic in 51 districts of Bihar, Jharkhand, West Bengal and UP. The Kala-azar Control Programme was launched in 1990-91. The annual incidence of disease has come down from 77,099 cases in 1992 to 31217 cases in 2005 and deaths from 1,419 to 157, respectively. To pursue the goal of elimination, kala-azar fortnights for active case detection have been intensified. In addition, to facilitate case detection and treatment compliance, Rapid Diagnostic Test rK39 and oral drug miltefosine, respectively have been introduced.

For control of Dengue fever that is emerging as major threats in urban, peri-urban and rural areas, due to expanding urbanization, deficient water and solid waste management, the emphasis is on avoidance of mosquito breeding conditions in homes, workplaces and minimizing the man-mosquito contact. In 2005, 11,928 cases of Dengue and 156 deaths have been reported from 18 endemic states. Improved surveillance, case management and community participation, inter-sectoral collaboration, enactment and enforcement of civic by laws and building bye laws are emphasized for both these VBDs.

Japanese encephalitis is a major problem in Uttar Pradesh, Assam, Andhra Pradesh, Goa, Haryana, Karnataka, Kerala, Manipur, Tamil Nadu, Maharashtra, Bihar and West Bengal. During year 2005, total 6727 cases and 1682 deaths due to suspected Japanese Encephalitis were reported from 14 states. In addition to various JE control measures like strengthening of surveillance, case management facilities, vector control and other supportive interventions, a vaccination programme for children between 1 and 15 years of age under the Universal immunization programme using single dose live attenuated SA-14-14-2 vaccine has been launched in 2006.

During the XI Plan period, the existing strategies for prevention & control of vector borne diseases would be continued and further strengthened with special emphasis on surveillance, human resource development, behaviour change communication, supervision and monitoring, quality assurance and quality control of diagnostics, drugs and operational research. The Programme aims to maintain Annual Blood Smear Examination Rate of over 10% and bring down the Annual Parasite Incidence to 1.3 or less so as to accomplish 25 per cent reduction in malaria mortality by 2010 and 50 per cent by 2012. Towards elimination of Lymphatic Filariasis, eligible population living in endemic districts will be covered under Mass Drug Administration with single recommended dose of DEC or DEC and Albendazole. For the patients, home based morbidity management and hydrocele operations will be augmented. Towards Kala-azar elimination, the annual incidence will be reduced to less than 1 per 10,000 population at the sub-district level by 2010. Control of Dengue and JE is targeted at reduction of case fatality and frequency of outbreaks. To deal with 50% shortage of MPW (M), it is proposed to fill up 25% of the vacant posts through



contractual schemes by Govt of India, while the states will be impressed to meet the funds requirement for remaining 25% posts. The proposed overall budget for prevention and control of VBDs under NVBDCP is Rs 3494.60 crores.

## **2. NATIONAL LEPROSY ERADICATION PROGRAMME**

During the last two decades (1983-2005), the National Leprosy Eradication Programme has made tremendous progress. The disease has come down to a level of elimination i.e. less than one case per 10,000 population at the national level by December 2005. This level is very important from public health point of view. However, still the disease is prevalent with moderate endemicity in about 20% of the districts. The disease also has a long incubation period of average 2-5 years and therefore need a longer period of surveillance. Since the programme aims for eradication i.e. zero endemicity of leprosy, strong measures need to continue even during the XI plan period i.e. April 2007 till March 2012.

During the X Plan period, a number of initiatives were taken to augment the service delivery system. This helped in quick detection of hidden leprosy cases and putting them under treatment. These measures also helped in improving the quality of leprosy services through General Health Care System. Due to achievement of elimination at state level, the State/UT Governments may give minimum priority to leprosy in comparison to other demanding Health Programmes. The National Leprosy Eradication Programme is therefore needed to be kept as a 100% centrally sponsored scheme for the XI plan period.

During the XI Plan, the programme will aim at further reducing the leprosy burden in the country while providing high quality leprosy services for all persons affected by leprosy to General Health Care System. Enhanced emphasis will be laid on Disability Prevention & Medical Rehabilitation (DPMR) services for leprosy affected persons. Further advocacy efforts will be continued in order to reduce stigma and stop discrimination against leprosy affected persons and their families. Total budget proposed for the XI plan period is Rs. 259.2 crores.

## **3. REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME**

India is the highest TB burden country globally accounting for one fifth of the global incidence. Every year 1.8 million people in India develop tuberculosis (TB), of which 0.8 million are infectious smear positive cases. TB kills more people than any other single infectious agent; nearly 370,000 die from it – more than 1000 every day. The prevalence of TB disease in the population in 2000 has been estimated at 3.8 million bacteriologically positive cases. The emergence of HIV-TB co-infection and multi drug resistant tuberculosis has increased the severity and magnitude of this TB epidemic.

The national TB control programme was formulated and implemented in 1962 through establishment of the District TB Centres. However, the programme did not



make any significant epidemiological impact on the burden of TB in the country. Following a joint programme review by GoI and WHO-SIDA, Revised National Tuberculosis Control Programme (RNTCP) was launched in 1993 with the goal to decrease mortality and morbidity due to TB and cut transmission of infection until TB ceases to be a major public health problem in India. RNTCP is an application in India of the WHO-recommended the Directly Observed Treatment, Short Course (DOTS) strategy to control TB with the objective of curing at least 85% of new sputum positive TB patients and detecting at least 70% of such patients. The programme was implemented in the country in a phased manner from 1997 and has achieved completed nation wide coverage in March 2006.

The first phase of the project saw the establishment of over 600 state and district TB control societies to facilitate decentralized programme planning and implementation, and over 11, 800 microscopy centres have been upgraded to provide quality sputum microscopy services. Since the inception of the programme, over 5.8 million patients have been initiated on treatment, and the programme has achieved all the proposed goals in terms of expansion of DOTS services, case finding and treatment success during the X Five Year Plan Period (2002-2007). The expenditure for the period 2002-03 to 2005-06 was Rs. 536.18 crores. The approved budgetary estimate for the year 2006-07 is Rs. 202.17 crores.

The government has expressed its due commitment to support the programme as a 100% centrally sponsored programme for the coming 15-20 years till TB continues to a major public health problem. The sustainability of all activities of the programme has been ensured through continued financing of the phase II of RNTCP till 2010 which has been approved by the 'Cabinet Committee on Economic Affairs'. This will consolidate, maintain and further improve the achievements of the first phase and enable India's progress towards achieving the TB-related Millennium Development Goal (MDG) targets.

Based on the earlier programme experience and the Project Implementation plan of Phase II of RNTCP, to strengthen the ongoing TB control activities and support new initiatives viz. management of Multi Drug Resistance (MDR) TB using DOTS Plus, strengthening State level laboratory network to undertake culture and sensitivity testing, pediatric patient wise drug boxes, etc, approximately outlay of Rs. 1450.00 crores would be required to implement RNTCP DOTS programme in the entire country during the XI plan period. During the period nearly 30 million TB suspects would be examined, and would help in diagnosing and initiating over 6 million TB patients on treatment, of which nearly 3 million would be infectious sputum positive patients and successfully treat over 85% of new sputum positive registered patients.

#### **4. NATIONAL AIDS CONTROL PROGRAMME**

In India, it is estimated that 5.21 million people are living with HIV/AIDS. The Govt of India has responded to this challenge through preventive awareness, targeted interventions and care & support programmes, since 1986. However, the planned initiatives included Medium Term Plan (1990-1992), first five year strategic plan (NACP-I, 1992-99) and second five-year strategic plan (NACP-II, 1999-2006). The



successful strategies of NACP-II have yielded significant positive results. The HIV prevalence is stabilizing and states like Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra and Nagaland have started showing declining trend.

The NACP-III during XI plan period of 2007-2012 has set the goal to halt and reverse the epidemic in India over the next 5 years by integrating programmes for prevention, care, support and treatment. This will be achieved through four strategic objectives namely:

1. Prevention of new infections in high risk groups and general population through:
  - a. Saturation of coverage of high risk groups with targeted interventions (TIs)
  - b. Scaled up interventions in the general population.
2. Increasing the proportion of people living with HIV/AIDS who receive care, support and treatment.
3. Strengthening the infrastructure, system and human resource in prevention, care support and treatment programmes at the district, state and national levels.
4. Strengthening a nation-wide strategic information management system.

The specific objective is to reduce new infections as estimated in year 1 of the programme by:

- Sixty percent (60%) in high prevalence states so as to obtain the reversal of the epidemic; and
- Forty percent (40%) in the vulnerable states so as to stabilize the epidemics.

Based on the lessons learnt from the previous two phases, the NACP-III will be strengthened during the XI plan period. The priorities and thrust areas will include prevention; care, support and treatment; capacity strengthening; and strategic information management. The total financial support required for implementation of NACP during the XI five year plan (2007-2012) is **Rs.11,585 crores**.

## **5. INTEGRATED DISEASE SURVEILLANCE PROJECT**

Integrated Disease Surveillance Project (IDSP) was initiated during 10<sup>th</sup> plan period in November, 2004 with World Bank assistance with the objectives to improve the information available to the government health services and private health care providers on a set of high priority diseases and risk factors, with a view to improve the on-the-ground responses to such diseases and risk factors. The project has components of establishment and operation of a central level disease surveillance unit, integration and strengthening of disease surveillance at state and district levels, improvement of laboratory services and capacity building for disease surveillance and action.



The diseases covered under the project also include water-borne diseases and emerging diseases.

## **6. LEPTOSPIROSIS CONTROL PROGRAMME**

Due to rapid ecological changes in the region during the past decade many Zoonoses have emerged and resulted into epidemics causing significant morbidity and mortality in human beings in different parts of the country. Leptospirosis is one of the diseases which predominantly occurs in coastal region. The objectives of the programme are (i) to establish the surveillance in the country and (ii) to reduce the morbidity and mortality due to Leptospirosis in India.

The pilot project is proposed to be carried out in Kerala and South Gujarat. The reduction in morbidity and mortality would be the indicator for the effective implementation of the programme. The strategy would be development of data base, identification of vehicle of transmission, identification of serovar prevalence in endemic states, identification of causes of upsurge, strengthening diagnostic facilities, improving management facilities, health education and reduction mortality to zero in five years. To undertake this activity, the help from the following institutions will be sought:

1. National Bureau of Soil Survey and Land Resource Management
2. Department of Meteorology
3. Rodent Control Board of India
4. Department of Animal Husbandry of endemic states

For conduction of this study NICD will work with regional institutions and keep itself updated on the latest developments. NICD will act as a resource center for the dissemination of relevant technical information. The study will address the dynamics of disease transmission, health risk assessment and other issues of importance.

The financial implications for conducting the study are Rs. 20.26 crores.

## **7. HUMAN RABIES CONTROL PROGRAMME**

The broad objective of the proposed pilot rabies control programme is

- (a) Prevention of human deaths due to rabies.
- (b) Reducing the transmission of disease in animals.

### **Targets, Indicators and Means of Verification**

Reduction of rabies deaths in human beings by atleast 50% by the end of 11<sup>th</sup> Five Year Plan in the pilot project areas. For verification, the retrospective data will be collected from pilot project areas and continuous surveillance will be maintained till the end of XI<sup>th</sup> Five Year Plan.



## Strategies

The programme will be implemented as a pilot project, with National Apex Committee constituted by Director General of Health Services (Chairperson), Animal Husbandry Commissioner, GOI, Joint Commissioner, Live Stock and Health, Joint Commissioner, Ministry of Information and Broadcasting, Govt. of India, Director, NICD, Director IVRI, Izzatnagar, Director PII, Coonoor, HOD, Zoonosis Division for prevention and control of rabies as the Nodal Agency.

➤ Initiatives (proposed activities) with special focus on :

Priority areas for basic, clinical, applied and operational research, mechanisms of involvement of NGO/Private sector/Community/Local Self, Government in implementation and monitoring programmes

### A. Human Component

The various elements of the programme implementation are as follows:

- Local health authorities will make available the infrastructure and logistics in the pilot project areas for post exposure treatment using Tissue Culture Vaccines and facilities of wound wash at anti rabies clinics will be provided by local health authorities.
- Strengthening of surveillance to generate reliable data. Attempts will be made to integrate surveillance under IDSP network.
- Development of trained manpower.
- Development and distribution of IEC material and ensuring community participation in IEC activities.
- Involvement of NGOs and private sector:
- Strengthening the Nodal agency for human rabies control (NICD, Delhi) for monitoring and evaluation of the human component.
- Operational Research with focus on study of factors leading to rabies deaths and minimizing animal bites

### B. Veterinary Component

Various elements would include :

- Free of cost vaccination of dog population
- Enforcement of licensing and obligatory registration of dogs
- Involvement of NGO's in vaccination and sterilization of dogs and creating awareness in general community.
- Training of veterinary and para – veterinary staff involved in rabies control programme
- Strengthening of referral as well as diagnostic laboratories.
- Monitoring and Evaluation system including status of MIS, Disease Surveillance, its quality and utilization



Programme would be periodically monitored and evaluated by National Apex Committee in all the centres. NICD, Delhi would monitor the human component. A consultant with experience in the field of rabies will be engaged by NICD for this purpose. On day to day basis monitoring of the programme in individual cities will be done by the civic authorities. Initially the programme is proposed to be implemented in 2 major cities on pilot project basis.

The total budget for the project for five years is approx. Rs. 26.71 crores

## 8. NATIONAL CENTRE FOR DISEASE CONTROL

The proposal to strengthen NICD as the National Centre for Disease Control (NCDC) (Budget approx. Rs 95 crores from 2006-07 to 2011-12) which is already under the consideration of the Govt. may be included in the 11<sup>th</sup> Plan. The budget proposal for XI Plan period works out to be Rs. 89.95 crores.

Rs. In crores

		Consolidated budget - Proposed for XI Five Year Plan					
		2007-08	2008-09	2009-10	2010-11	2011-12	Total
NVBDCP budget	Malaria	319.15	306.46	316.97	328.30	346.52	1617.40
	Urban Malaria Scheme	19.71	20.09	20.50	20.91	21.33	102.54
	Filaria	93.89	93.89	93.89	93.89	93.89	469.45
	Kala-azar	65.25	65.25	59.58	57.81	57.81	305.70
	Dengue	6.21	5.11	4.11	4.11	4.11	23.65
	Japanese Encephalitis	15.61	14.72	8.45	8.50	8.55	55.83
	Vacant post salary	180.00	180.00	180.00	180.00	180.00	900.00
	R&D to NIMR	3.00	3.00	3.00	3.00	3.00	15.00
	Consultancy	1.00	1.00	1.00	1.00	1.00	5.00
	<b>Total NVBDCP</b>	<b>703.82</b>	<b>689.52</b>	<b>687.50</b>	<b>697.52</b>	<b>716.21</b>	<b>3494.57</b>
RNTCP budget	TB	286.00	265.00	276.00	300.00	320.00	1447.00
Leprosy budget	Leprosy	59.48	57.08	49.10	47.00	46.54	259.20
NACP budget	HIV/AIDS	1882.00	2071.00	2599.00	2469.00	2564.00	11585.00
IDSP	IDSP	83.99	64.37	62.00	64.35	66.74	341.45
Rabies	Prevention of human rabies	5.69	4.75	5.03	5.40	5.85	26.72
Leptospirosis	Leptospirosis control programme	12.72	1.88	1.88	1.89	1.89	20.26
NCDC	NCDC	28.1	16.45	16.1	16.5	12.8	89.95
Total (NICD)		130.50	87.45	85.01	88.14	87.28	478.37
Grand Total		3061.80	3170.05	3696.61	3601.66	3734.03	17264.14



The overall budget proposal of about Rs 17273 crore for the XI Plan period in respect of communicable diseases is due to :

- (i) additional support for elimination of lymphatic filariasis, upscaling of use of insecticide treated nets for prevention and control of vector borne diseases, strengthening of diagnostic facilities and introduction of alternate drugs under NVBDCP
- (ii) initiatives proposed under National AIDS Control Programme (NACP) and
- (iii) provision of funds under IDSP, Rabies, Leptospirosis
- (iv) Strengthening of NICD as NCDC

**Comparison of Proposed Budget for XI Plan to approved under X Plan:**

	Rs. in crores		
	X plan approved budget	Proposed for XI Plan	Increase from X to XI Plan
NVBDCP budget	1349.00	3494.57	2145.57
RNTCP budget	662.00	1447.00	785
Leprosy budget	236.00	259.20	23.2
NACP budget	1392.80	11585.00	10192.2
IDSP	260.00	341.45	81.45
Prevention of human rabies	0	26.71	26.71
Leptospirosis control programme	0	20.26	20.26
NCDC		89.95	89.95
<b>Total</b>	<b>3899.8</b>	<b>17264.14</b>	<b>13364.34</b>



## NON-COMMUNICABLE DISEASES

### Public Health Challenges

India is experiencing a rapid health transition, with a large and rising burdens of chronic diseases, which are estimated to account for 53% of all deaths and 44% of DALYs lost in 2005. Non-Communicable Diseases (NCDs), especially Diabetes Mellitus, Cardiovascular Diseases (CVD), Cancer, Stroke and Chronic Lung Diseases have emerged as major public health problems due to an ageing population and environmentally-driven changes in behaviour. The premature morbidity and mortality in the most productive phase of life is posing a serious challenge to Indian society and its economy.

Cancer is one of the ten leading causes of death in India. Nearly 7 to 9 lakh cancer cases occur every year; and an estimated nearly 25 lakh cases are present in the country at any point of time. Data from ICMR's population-based registries under the National Cancer Registry Programme indicate that the leading sites of cancer have remained unchanged over the years, viz., oral cavity, lungs, oesophagus and stomach amongst men; and cervix, breast and oral cavity amongst women.

According to the 2001 census, India had 2.19 crore persons with disabilities who constitute 2.13% of the total population. This includes persons with visual, hearing, speech, locomotor and mental disabilities. An estimated 12 million persons are bilaterally blind with Visual Acuity less than 6/60 in the better eye. Cataract (62.6%) is the main cause of blindness followed by Refractive Error (19.70%).

Severe mental disorders, including schizophrenia, bipolar disorder, organic psychosis and major depression, affect nearly 20 per 1,000 population. The current estimates of substance abuse for alcohol, cannabis and opiates use in community based representative sample is 7-214 per 1,000.

India has the largest number of people with diabetes in the world, with an estimated 19.3 million in 1995 and projected 57.2 million in 2025. The prevalence of Type 2 diabetes in urban Indian adults has been reported to have increased from less than 3.0% in 1970 to about 12% in 2000. Nearly 2.7 crore CHD cases (urban - 1.2 crores and rural - 1.5 crores) are estimated to have occurred in 2000 which will more than double to nearly 6.1 crores cases in 2015. A total of 6.4 crore cases of CVD are likely in the year 2015 of which 96% would be CHD cases and death from this group of disease are likely to amount to be a staggering 34 lakhs. It has been estimated that number of new patients who reach End-organ failure every year is increasing.

Environmental Iodine deficiency is widespread in various parts of India. Surveys conducted by the Directorate General of Health Services, Indian Council of Medical Research Health Institutions and the State Health Directorates show that of 324 districts surveyed, 263 districts were endemic for IDD with a prevalence rate of more than 10%. Over 71 million persons suffer from Iodine Deficiency Disorders.



Fluorosis is prevalent in 19 States/UTs covering 196 districts of the country affecting about 66 million population. It affects all ages.

Oral diseases, especially periodontal (gum) diseases, greatly impact on systemic health. Tooth loss from gum diseases and dental caries causes aesthetic, functional, nutritional and psychological problems. India has the highest prevalence of Oral cancer.

India has 76.6 million people at or over the age of sixty (2001 Census) constituting about 7.7% of its total population. With the increasing life expectancy, the proportion of elderly is set to rise dramatically in the next few decades. The health of the elderly requires comprehensive care with preventive, curative & rehabilitative services. There is a need for a specialized geriatric health service, which recognizes the elderly as being a vulnerable population.

In India, road traffic injuries result in over one lakh deaths every year, requiring concerted efforts for effective and sustainable prevention and management. They account for 20 lakh hospitalizations & 77 lakh minor injuries, with an estimated economic loss of Rs. 55,000 crores (nearly 3% of GDP) every year.

NCDs are linked to a cluster of major risk factors, such as tobacco use, unhealthy diets, physical inactivity, obesity, high blood pressure, cholesterol and glucose levels that are measurable and largely modifiable. A cost-effective preventive strategy will need to focus on bringing down the risk factors both in an individual and in population at large. ICMR assessed Burden of NCDs based on the secondary data. The Integrated Disease Surveillance Project (IDSP) has planned NCD surveys.

### **National Cancer Control Programme**

The strategy for the National Cancer Control Programme, started in 1975-76 with priority for equipping the premier cancer hospital/institutions, was revised in 1984-85 and further in 2004 with stress laid on primary prevention, early detection and treatment of cancer cases, strengthening of existing cancer treatment facilities and palliative care in terminal stage of the cancer. A telemedicine project - Onconet-India – has been operationalised to connect 25 RCCs and each RCC with 4 to 5 peripheral centres. Expansion of Cancer Atlas and Cancer Registry programme is under consideration. IEC activities for cancer have been strengthened. Manuals have been developed for Training of health professionals in Cancer, Tobacco Cessation, Cytology and Palliative Care. Community based cancer control programmes are being carried out, mainly as pilot projects. A National taskforce has formulated the strategies for the XI Five Year Plan under the NCCP. Based on its recommendations and discussions within the ministry, a recommendation of Rs.2000 crores has been proposed for the 11<sup>th</sup> plan. The strategies proposed include



1. Prevention and early detection of cancers through District Cancer Control activities and strengthened IEC campaign.
2. Promotion of 'centres of excellence' in the field of cancer management with financial assistance to existing RCCs of 20 years of proven track record.
3. Augmenting comprehensive cancer care facilities across the country through institutional capacity building in new and existing RCCs and through new and existing oncology wings.
4. Development of early diagnostic capabilities in district hospitals
5. Encouraging public private partnership
6. Increasing capacity for palliative care in cancer
7. Promoting research in cancer relevant to cancer control in India.
8. Capacity building and training of all personnel in cancer prevention and early detection for all categories in phased manner.
9. Health education of the general public through use of audio, video and print media regarding prevention and early detection of cancers.
10. Promoting innovations in cancer care, and indigenising cancer treatment equipment.

### **National Programme for Control of Blindness**

Launched in the year 1976 as a 100% centrally sponsored scheme, the schemes/strategies will be continued during the 11th Plan with some modifications towards achieving the ultimate goal of eliminating avoidable blindness from the country. New initiatives proposed include construction of dedicated Eye Wards and Eye Operation Theatres in district Hospitals in NE States, Bihar, Jharkhand, Jammu & Kashmir, Himachal Pradesh, Uttaranchal and few other states as per demand, GIA for NGOs for Management of other Eye Diseases other than Cataract and special attention to clear Cataract Backlog and take care of other Eye Health Care Centres from NE States, Telemedicine in Ophthalmology, setting up Centre of Excellence, Vitamin A supplementation and MMR Vaccination through DBCS corpus funds are some of the activities prepared to be undertaken in 11<sup>th</sup> plan. Proposed budget allocation is Rs. 1,550 crores for the 11<sup>th</sup> Plan.

### **National Mental Health Programme**

Among important causes for the lack of adequate treatment of mental disorders are lack of knowledge on the treatment availability & potential benefits of seeking treatment, and inadequacy of psychiatric manpower. The National Mental Health Programme aimed at strengthening DMHP & enhancing its visibility at grass root level, filling up manpower gap in the field of psychiatry in general & DMHP in particular, harnessing NGO's help in the Community Based care of mentally ill, and focusing on preventive & promotive components of Mental Health. A revised National Mental Health Programme is proposed for the 11th Five Year Plan with the objectives to empower the primary care doctor to be able to offer care to these patients at PHC's, improve public awareness and facilitate community participation, upgrade Psychiatry departments of Medical colleges and improve Mental hospitals that offer tertiary care. Total project cost during the 11<sup>th</sup> Five Year Plan will be of Rs. 940 crores.



## **Drug De-Addiction Programme**

In the area of drug de-addiction, the Ministry of Health and Family Welfare works towards demand reduction through provision of treatment services, including preventive health and after care. The Drug De-addiction Programme of the Ministry was started in 1987-88. The programme, started in 1987-88 with the establishment of 6 De-addiction Centres in Central Institutions, was restructured in 1992-93. Till 2006, 123 Drug De-addiction Centres (including six centres in Central Hospitals/Institutions) have been established, of which 43 are in the North Eastern States. Based on the recommendations made by the Evaluation Study Report, the need for revision of the ongoing scheme has been felt. The revised scheme proposed aims to reduce the health costs and social cost due to drug abuse and promote a drug-free healthy lifestyle, by strengthening existing centres in medical colleges and hospitals in a phased manner. A budget outlay of Rs 75.5 crores has been proposed for the 11<sup>th</sup> plan.

## **National Iodine Deficiency Disorders Control Programme**

It is proposed to bring down prevalence of IDD below 10% in the entire country by 2012 AD and ensure 100% consumption of adequately iodated salt (15 PPM) at the household level through IDD surveys through State Govts/NGOs, establish IDD Control Cells, and IDD monitoring labs, quality control of iodated salt at the consumer level, training programme, production and distribution of iodated salt, health education and publicity, and pilot programme for the control of micronutrient deficiencies. A budget outlay of Rs 155 crores has been proposed for the 11<sup>th</sup> plan.

## **Oral Health**

Oral diseases, especially periodontal (gum) diseases, greatly impact on systemic health. India has the highest prevalence of Oral cancer. The centrally sponsored National Oral Health Care Programme is a pilot project started in 1999 by DGHS and the Ministry of Health & FW with the All India Institute of Medical Sciences as the nodal agency. While initial funding was from the Ministry, later, the budget was merged with AIIMS budget in 10<sup>th</sup> plan. Initially implemented in Maharashtra, Punjab, Delhi, Kerala & NE states, the project focusses on primary prevention with 3 components – (i) Oral Health Education (ii) IEC material production, and (iii) Training modules' formulation. Three million children in 6,000 schools of 72 cities and 16 states were covered for oral health education in collaboration with Indian Dental Association, training modules and IEC materials were developed and training programmes conducted for dental surgeons, health workers and school teachers. The project was reviewed by the National Institute for Health and Family Welfare in 2004. It may introduce dental treatment in its Community Health Insurance Scheme being planned for the National Rural Health Mission. The strategies proposed for 11<sup>th</sup> plan include oral health education, formulation of Basic Package on Oral Health (BPOC) for the country and its implementation, Manpower & Infra-structure development, and Capacity building & monitoring dental public health & research



through National, State & District Oral Health Cell. Total budget estimated for the 11<sup>th</sup> plan is Rs. 182.09 crores.

### **National Programme for Prevention and Control of Deafness**

In India, an estimated nearly 63 million people suffer from Significant Auditory Impairment (estimated prevalence 6.3%). A pilot project, being conducted in 25 districts of 10 states and 1 UT from 2006 to 2008, which is in the first phase of implementation, will be expanded in a phased manner. The proposed programme aims to prevent and control major causes of hearing impairment and deafness, so as to reduce the total disease burden by 25%, by the end of Eleventh Five Year Plan. The various activities include (i) preventing the avoidable hearing loss on account of disease or injury, (ii) early identification, diagnosis and treatment of ear problems (iii) medical rehabilitation, (iv) strengthening the existing inter-sectoral linkages (v) developing institutional capacity for ear care services. While ensuring adequate regional representation of the states, priority would be given to states with weak public health indicators. During 11<sup>th</sup> plan, additional medical colleges will be identified to serve as Centres of Excellence for the programme districts. An estimated budget of Rs 124 crores is proposed for the 11<sup>th</sup> plan.

### **Medical Rehabilitation**

Of the persons with disabilities, 75% live in rural areas with limited access to health care services. Population over 60 years of age (7.5%) have disabilities affecting multiple systems. To provide rehabilitation services at all levels health care delivery system, adequate manpower and interdisciplinary team development has to be an essential component of programme. To build capacity in Medical Colleges and District Hospitals and train adequate manpower required for Medical rehabilitation programme at all 3 levels of Health Care Delivery System rehabilitation services will be established from sub-centre to the district and state level as a pilot project by respective medical college while ensuring its integration in the existing primary health care system. It is proposed to estimate a total Budget estimate of Rs.119 crores.

### **National Programme for Prevention and Control of Diabetes, Cardiovascular Diseases and Stroke**

Common risk factors that underlie CVD and diabetes include unhealthy diets, physical inactivity and over weight and smoking. Prevalence of overweight in India is expected to increase in both men and women over the next 10 years. At least 80% of premature heart disease, stroke and type 2 diabetes, and also 40% of cancers in India could be prevented through healthy diet, regular physical activity and avoidance of tobacco products. The proposed National Programme on Diabetes, CVD and Stroke, will aim to prevent and control common NCD risk factors through an integrated approach and reduce premature morbidity and mortality from DM, CVD and Stroke. It will build capacity of health systems to tackle NCDs and improve



concerned Departments. For this programme, about Rs.68 crores is suggested for the 11th Plan.

### National Programme of Health Care for the Elderly

The health of the elderly, a vulnerable population, requires comprehensive care with preventive, curative & rehabilitative services. A specialized geriatric health service is needed. The National Policy on Older persons (1999) has emphasized the major issues relevant to the elderly population and the need to provide specialized Geriatric services at various levels of health care. The proposed programme will improve the access to promotive, preventive, curative and emergency health care among elderly persons by (i) providing comprehensive health care to the elderly by preventive, curative and rehabilitative services, (ii) training Health Professionals in Geriatrics, including supportive care and Rehabilitation, and (iii) developing scientific solutions to specific elderly health problems by research into Geriatrics and Gerontology. Estimated budget for the programme will be Rs 95 crores.

### National Trauma Care Programme

Road Traffic Injuries are major but neglected health problem globally, more so, in developing countries. There is a strong need to develop and implement an urgent and comprehensive trauma care system covering the entire nation with statewide emergency medical service and trauma care system, designated trauma facilities, and trauma registry. This programme should consist of Prehospital Trauma Care, Hospital Care, Rehabilitation of injured and Injury Prevention. The budget estimated for the programme during the 11th Plan is still to be finalised.

### Comparison of Proposed Budget for XI Plan to approved under X Plan

Rs. In crores

SN	Programme	Approved budget X plan	Proposal for XI plan	Increase from X to XI Plan
Ongoing National Programmes	Cancer	266.34	2000	1733.66
	Blindness	445.0	1550	1105
	Mental Health	190	940	750
	De-Addiction	33.0	75.5	42.5
	IDD	49	155	106
Initiated in 10 <sup>th</sup> plan	Oral Health		182.09	182.09
	Deafness	15	124	109
	Medical Rehabilitation	81.6	119	37.4
Proposed for 11 <sup>th</sup> Plan	CVD, DM, Stroke	5.0	1250	1245
	Organ Transplant	-	100	100
	Fluorosis	-	68	68
	Geriatrics	-	95	95
	Trauma	-	*	0
Grand Total		1084.94	6658.59	5573.65

\* estimated budget not received



quality of care, impart health education through mass media and integrate Panchayati Raj Institutions in the rural areas and Municipalities and other Local Self Government Institutions with health sector initiatives for effective intervention. Minimum standards of care by the private institutions will be ensured through guidelines for "Minimum Ethical and Technical Standards" to be developed by a council. Co-ordination and consensus between various health care providers is required to deliver consistent health messages. India has played a leading role in the development of Framework Convention on Tobacco Control (FCTC) and was among the first countries to ratify it. WHO estimates that an additional 2% annual reduction in chronic disease death rates in India over the next 10 years would result in an economic gain of 15 billion dollars for the country. It is proposed to cover 150 medical colleges and 150 district and sub-district health facilities with a budget of Rs. 1,250 crores.

### **National Organ Transplant Programme**

Dialysis facilities are available only at selected centers. Only 3,500 kidney transplants and a few thousand corneal transplants are undertaken every year, with still fewer transplantation of liver, heart, lung, and pancreas. There is a dearth of skilled manpower in spite of fact the number of people that require transplant are increasing. The new programme proposes to impart health education of general public through TV, Radio, Newspaper, etc., oversee establishment and functioning of ORBO network on all India basis and involve districts through District Organ Transplant Programme. The estimated budget requirement for the 11<sup>th</sup> plan is Rs 100 crores.

### **National Programme for Prevention & Control of Fluorosis**

Fluorosis is a public health problem. It is caused by excess intake of fluoride through drinking water, food products, industrial pollutants, etc., over a long period. The permissible limit of fluoride, as per BIS, is 1 ppm in drinking water. About 66 million population in India are affected. As there is no effective treatment for the fluoride related disorders, prevention is the most effective measure for tackling the fluorosis problem. At present, there is no National Programme for prevention & control of Fluorosis. The Chairman of National Human Rights Commission, who reviewed the fluorosis situation in the country, has suggested for a National programme. This will involve Department of Drinking Water Supply, Ministry of Environment, Information & Broadcasting, Social Justice & Empowerment, Health & F.W. For provision of safe drinking water, Government of India supplements the efforts of State Government and UT's by providing funds under the Accelerated Rural Water Supply Programme (ARWSP). The expected outcomes are identification of various sources of fluoride intake at the village level in the district, development of trained manpower for diagnosis and prevention of fluorosis and extensive awareness programme would be created at the village level and to save the people from harmful effects of irreversible nature of fluorosis. A technical committee will be constituted under the chairmanship of DGHS and involving all



## **OPERATIONAL RESEARCH**

Operational Research is a scientific approach to the solutions of the problems in the management of complex systems. It is a professional discipline that deals with the applications of information technology for informed decision making. By using analytical methods, operational research helps in problem solving and decision making that is useful in the management of organizations. The goal of Operational Research is to provide rational basis for decision making by seeking to understand and structure complex situations and utilize this understanding to improve system behaviour and system performance.

Health care delivery system is no less complex, Operational Research has an important role in solving health problems and helping in decision making. In the health sector, OR is concerned with day-to-day operations of programs. It is intended to provide the information for improving service delivery activities and plan for better future service. It seeks practicable solutions to problem situations. Several program areas common to both communicable and non-communicable disease control programs need to be addressed through Operational Research are as follows:

### **General Recommendations on Operational Research**

- Improving diagnosis and treatment delivery and development of new tools for the diagnosis and treatment.
- Integrating disease control programs within primary health care system
- Ensuring equitable access of health services to all populations sub-groups especially women, the poor and the marginalized population (SC/ST).
- Addressing new interventions and identifying better ways to implement and monitor current interventions
- Development of information and communication systems for program oversight and surveillance.
- Greater attention to areas with under developed infrastructure
- Realistic assessment of the cost effectiveness of various interventions and their impact on health, social and economic developments.
- Newer and more effective approaches suited to local circumstances
- Forecasting of prevalence to incidence of disease over planned period and prediction of epidemics using epidemiological and mathematical statistical models.
- To develop programme evaluation methodologies for national health programmes and to undertake feasibility studies for the new methodologies so developed.

### **Health Economic Related Operational Research**

- Cost effective analysis of different programme for priority between different diseases.



- Cost effectiveness analysis of different treatment regimen for prevention and treatment of diseases.

#### **Laboratory Related Operational Research**

- Quality of lab. Diagnosis: lab related factors; periodic training; adequacy of reagents, kits, good microscope.
- Delayed diagnosis: community factors, surveillance factors & lab. Factors.
- How to upgrade drug delivery system: surveillance mechanisms?
- Reasons for poor drug compliance rate: community factors, social educational, ethnic, cultural?

The budget required for Operational Research during 11<sup>th</sup> plan is Rs. 99.5 crores.

**Total estimated budget for communicable and non-communicable diseases (excluding cost for National Trauma Care Programme) including operational research during the 11<sup>th</sup> Five Year Plan will be Rs. 24,022.23 crores.**



# BACKGROUND







## **BACKGROUND**

In the context of formulation of the Eleventh Five Year Plan (2007-12), Planning Commission, Government of India has set up a Working Group on Communicable & Non-Communicable Diseases under the Chairmanship of Director General Health Services, Ministry of Health and Family Welfare, Government of India vide order No. 2(16)/06-H & F.W dated 25<sup>th</sup> May 2006 with the following terms of reference.

### **I. Communicable Diseases**

1. To review the status of ongoing major disease control programmes w.r.t:
  - Objectives, strategies, plan initiatives, targets and outlays during 10<sup>th</sup> Plan.
  - Achievements, problems detected, midcourse correction, utilization of funds.
2. To give suggestions regarding proposed objectives, strategies, initiatives, targets for 11<sup>th</sup> Plan including issues of sustainability, overlapping/ duplication and verification
  - to improve efficiency and quality of services at primary/secondary/tertiary level.
  - funding requirements during the Eleventh Plan.
3. In view of the above, identify priority areas for basic, clinical, applied and operational research during the XI Plan period.
4. To suggest mechanisms of involvement of NGO/private sector/community/local self government in implementation and monitoring the programmes proposed in the Eleventh Plan.
5. To review the current pattern of monitoring and evaluation of the existing programmes and suggest improvements during the Eleventh Plan.
6. To review the current status of HMIS, disease surveillance, its quality and utilization and propose improvement during the Eleventh Plan.
7. To deliberate and give recommendations on any other matter relevant to the topic.

### **II. Non-communicable Diseases**

1. To assess the estimated disease burden due to non communicable diseases, review the source of data, its accuracy, reliability and problems in making estimates, and suggest methods for improvement in the XI<sup>th</sup> Plan Period.
2. To review status of ongoing Central Sector/Centrally Sponsored Disease Control Programme for non-communicable diseases and suggest mechanisms for developing and implementing a non-communicable disease prevention, detection and management programmes during the



Eleventh Plan Period through the primary, secondary, tertiary and super specialty levels in government, voluntary and private sector health care network.

3. Taking into account the increasing longevity and life style changes, suggest appropriate preventive strategies as well as diagnosis and management of NCD in the elderly in primary, secondary and tertiary care settings.
4. To review ongoing schemes for emergency medical relief, and accident and trauma services, and suggest methods for managing these at primary, secondary and tertiary care level.
5. To identify priority areas for basic, clinical, applied and operational research during the Eleventh Plan period.
6. To suggest mechanism for meeting health care costs for management of NCD at national, state, panchayati raj institutions and individual levels.
7. To deliberate and give recommendations on any other matter relevant to the topic.

The first meeting of the Working Group held on 3<sup>rd</sup> July 2006 under the chairmanship of Dr R.K. Srivastava, DGHS, the members were briefed about the terms of reference of the group and methodology to be adopted to prepare. Following three sub-groups were formed:

S. No.	Subject	Convener
1.	Communicable Diseases	Dr P L Joshi, Director, NVBDCP
2.	Non-Communicable Diseases	Dr Bela Shah, Sr DDG, ICMR
3.	Research & Development	Dr Dipali Mukherjee, Sr DDG, ICMR

The sub-groups held in-depth deliberations and submitted the draft report to the working group.

A meeting was also held with officers of State Health Directorate and Programme Officers on 10<sup>th</sup> August 2006 to get their inputs on the draft reports of the sub-groups. Based on the discussions, the sub-groups modified their reports and submitted to the Working Group.

The second meeting of the Working Group was held under the chairmanship of DGHS on 28<sup>th</sup> August 2006 to discuss the reports of the sub-groups. The suggestions of the members/experts were included to finalise the report of the working group.



# INTRODUCTION







## INTRODUCTION

India is presently facing a triple burden of diseases; Communicable Diseases; Non-Communicable Diseases; and emergence of new infections. While many infectious diseases like tuberculosis and malaria are endemic, some of them occasionally attain epidemic proportion. Because of the existing environmental, socioeconomic and demographic situation, the developing countries are also vulnerable to rapidly evolving micro-organisms. During the past three decades more than 30 new organisms have been identified worldwide including HIV, *Vibrio cholerae* O139, Nipah virus, SARS coronavirus and highly pathogenic avian influenza virus A. Many of these organisms emerged in the developing countries of Asia.

With a rapid health transition in the country, a large and rising burdens of chronic diseases are estimated to account for 53% of all deaths and 44% of DALYs lost in 2005. Non-Communicable Diseases (NCD's) especially Diabetes Mellitus, Cardiovascular Diseases (CVD), Cancer, Stroke and Chronic Lung Diseases have emerged as major public health problems due to an ageing population and environmentally-driven changes in behaviour.

The morbidity and mortality due to emerging and re-emerging diseases, and non-communicable diseases is posing a serious challenge to public health and the economy of the country.

Though phenomenal gains have been made in the health status of the people has seen "increase in life expectancy, reduction in infant mortality, death rate and fertility rate, yet much more needs to be done to improve the quality of the life of the people for meeting the challenges of new, emerging and reemerging pathogens and also raising morbidity and mortality from non communicable and lifestyle-related diseases.







# COMMUNICABLE DISEASES







# NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME

## 1. Background

The National Vector Borne Disease Control Programme (NVBDCP) is an umbrella programme for prevention and control of vector borne diseases (VBD), viz., Malaria, Filariasis, Kala-azar, Dengue and Japanese Encephalitis (JE). These diseases are major public health concern and impede socio-economic development. The high risk areas for VBD are generally rural, tribal and urban slums inhabited by the poor, marginalized and vulnerable groups.

**1.1. National Malaria Control Programme:** At the time of Independence, there were an estimated 75 million malaria cases and 0.8 million deaths annually. Over the years, malaria had adverse effect on agriculture, industrial development and national economy, morbidity, mortality and the economic loss which was manifold during epidemic years. Repeated attacks of malaria used to lead to deterioration in mental and physical capabilities with consequent enormous loss of productive man days. The cost-effective intervention measures for malaria control with the use of insecticides became available in fifties and global experience in malaria control indicated then that malaria could be controlled or even eradicated within a short period, if available measures were undertaken effectively and efficiently. On these considerations, a centrally sponsored **National Malaria Control Programme (NMCP)** was launched in 1953 for malaria control in highly endemic areas and the programme was modified to a countywide **National Malaria Eradication Programme (NMEP)** in 1958 in view of spectacular success of NMCP.

Initially the programme was highly successful in preventing deaths due to malaria and also brought down annual malaria incidence to an all time low of 0.1 million cases by 1965. However, initial gains could not be sustained for various technical, administrative and financial constraints and resurgence of malaria became perceptible by seventies which reached the peak in 1976 with 6.47 million cases that necessitated launching of the Modified Plan of Operation (MPO) in 1977 with the immediate objectives to prevent deaths and to reduce morbidity due to malaria. The programme was integrated with primary health care delivery system. The blanket approach of Indoor Residual Spraying (IRS) was changed to selective IRS by stratifying the areas based on cases per 1,000 population in a year i.e. the Annual Parasite Incidence (API) of 2 and above. Modified Plan of Operation successfully brought down annual incidence of malaria from 6.47 million (0.85 million *P. falciparum*) in 1976 to 2.18 million cases (0.65 million *P. falciparum*) by 1984.

However, due to several constraints like rapid unplanned urbanization with inadequate water management provision and other developmental activities like construction, river valley projects, mega-industry, irrigation projects, etc. with no or grossly inadequate provisions for mitigating measures against





mosquitogenic/malariogenic conditions led to increased incidence. Population migration as a consequence of developmental projects and improved communication and unabated population growth further had an adverse effect on the programme performance.

In view of resurgence and outbreak of malaria in several states, the then Hon'ble Prime Minister of India reviewed the programme on 5<sup>th</sup> December, 1994 and gave directions to identify worst affected areas and to take specific measures to curb resurgence of the disease. Accordingly, the Govt. of India appointed an Expert Committee which submitted its report on 27<sup>th</sup> January, 1995.

Based on the recommendations of the Expert Committee, a Malaria Action Programme (MAP) 1995 was drawn up and sent to the states and UTs for prioritizing the high risk areas and implementation of strategy accordingly. The cases were reduced to around 2.5 to 3 million annually and the declining trend continued. The Enhanced Malaria Control Project (EMCP) with the assistance of World Bank was started in 1997 with the objectives of prioritization of the tribal areas with high disease burden and introduction of mix of cost-effective and sustainable strategies for control of malaria. The programme was, however changed from NMEP to **National Anti Malaria Programme (NAMP)** during the year 1998.

**1.2. The Urban Malaria Scheme (UMS)** was launched in 1971 with the objective to control malaria by reducing the vector population in the urban areas through recurrent anti-larval measures and detection and treatment of cases through the existing health services. The scheme was sanctioned for 181 towns spread over 17 states and two union territories. However, it has so far been implemented in 131 towns only covering a population of 101.1 million in 2005.

**1.3. The National Filaria Control Programme (NFCP)** was launched in 1955 to delimit the problem and implement the treatment of microfilaria carriers and disease cases with Diethylcarbamazine tablets along with anti-larval measures in urban areas. Filaria is endemic in 20 States/UTs except Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim, Jammu & Kashmir, Himachal Pradesh, Haryana, Punjab, Chandigarh, Rajasthan, Uttaranchal and Delhi and NFCP activities are implemented through 206 control Units, 199 Filaria Clinics and 27 Filaria Survey Units located in urban areas of endemic states. The programme has undergone various paradigm shifts and since 1994 the services of treatment of acute & chronic filarial cases have been extended to rural areas. During X Plan, piloting the Mass Annual Single Dose of DEC @ 6 mg per kg body weight in selected districts for elimination of lymphatic filariasis was undertaken and the revised of Mass Drug Administration (MDA) was further extended to all endemic states & districts in the year 2004 & 2005.

**1.4. Kala-azar** was highly endemic in India during pre-DDT era and had an obvious impact on economic growth of the country due to its high morbidity and



mortality rates. Cyclic epidemics used to occur with an inter-epidemic period of about 10 years or more. With the launching of extensive insecticidal spraying under National Malaria Control Programme/National Malaria Eradication Programme since 1953 and 1958 respectively, the disease declined to negligible proportion 'due' to collateral benefit of insecticidal pressure on the vector, *Phlebotomus argentipes*, with consequent interruption of transmission. However, there was resurgence in the sixties and by seventies the disease established itself in endemic form in Bihar followed by West Bengal. In the absence of any organized control activity, the disease slowly spread to several areas in these states. Considering the seriousness of the problem, centrally sponsored **Kala-azar Control Programme** was launched in the year 1990-91.

1.5. For prevention and control of Dengue and JE, there were no separate programmes. However, need based assistance and technical support were being provided by the Directorate.

1.6. In view of synergies in prevention & control of vector borne diseases including Japanese Encephalitis and Dengue, the programme was renamed as **National Vector Borne Disease Control Programme** in the year 2003 with the integration of three ongoing centrally sponsored schemes viz., NAMP, NFCEP and Kala Azar Control Programme and converging prevention and control of JE and Dengue.

1.7. **Objectives under NVBDCP:** During X Plan, the following objectives were enlisted :

- To prevent mortality due to Vector Borne Diseases namely Malaria, Kala-azar, Dengue/DHF and Japanese Encephalitis
- To reduce morbidity due to Malaria, Filariasis, Kala-azar, Dengue/DHF and Japanese Encephalitis
- Effective control with an ultimate goal of elimination of Kala-azar and Lymphatic Filariasis.

Towards reducing the burden of vector borne diseases and paving the way for healthy and socio-economically developed nation, the Government of India (GoI) in its National Health Policy (2002) has envisaged the goal to reduce mortality on account of malaria, dengue and Japanese encephalitis by 50% by 2010 along with efficient morbidity control, elimination of Kala-azar by 2010 and elimination of lymphatic filariasis by 2015. Reduction of morbidity and mortality on account of malaria and other vector borne diseases has been included in the Millennium Development Goals to meet the overall objectives of reducing poverty and improving health status. In this direction, the Government of India has launched National Rural Health Mission (NRHM) in April 2005. The goal of the NRHM is to improve the availability of and access to health care to people, especially for those residing in rural areas, the poor, women and children.

## **2. STATUS OF NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME DURING X PLAN**

### **2.1. MALARIA**

#### **2.1.1 Objectives**

- Prevention of death due to malaria.
- Reduction of morbidity due to malaria.
- Maintenance of ongoing socio-economic developments.

#### **2.1.2 Targets and Indicator**

- ABER over 10 per cent
- API 1.3 or less
- 25 per cent reduction in morbidity and mortality due to malaria by 2007 and 50 per cent by 2010 (NHP 2002)

#### **2.1.3 The strategies for malaria control :**

To maximize the outcome in terms of adequate coverage and access to malaria control services, strategy-mix is recommended under the programme.

- Early diagnosis and complete treatment,
- Integrated vector management by use of Indoor Residual Spraying (IRS) in selected high risk pockets, insecticide treated bed nets, larvivorous fish, environmental and minor engineering methods,
- Epidemic preparedness and rapid response,
- Behaviour Change Communication for social mobilization,
- Inter-sectoral convergence
- Capacity building by training,
- Monitoring and evaluation through Management Information System and field reviews

#### **2.1.4 Initiatives and Achievements**

- To overcome the manpower constraints of MPW (M) the community volunteers as Drug Distribution Centres (DDCs) and Fever Treatment Depots (FTDs) have been involved. There are 355173 DDCs and 98580 FTDs functioning in the country. On an average, nearly 100 million fever cases are examined yearly.
- Rapid diagnostic kits are being provided to these community volunteers in areas having *P.falciparum* predominance for enhancing the diagnostic capabilities and rational treatment practices in inaccessible remote areas without sufficient lab. Support.
- The Enhanced Malaria Control Project (EMCP) with World Bank assistance from 1997 to 2005 has been operational in 1045 PHCs in 100 districts of 8



states (Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Rajasthan and Orissa) predominantly inhabited by tribal population. In the EMCP areas, the number cases have declined from 1.17 m in 1997 to 0.76 m in 2005 (44% decline) and deaths from 522 to 301 (42%). The *Pf* cases reduced from 0.71 m to 0.51 m (28%).

- Introduction of combi packs containing (chloroquine 1500mg & primaquine 45mg: to be given over three days) for radical treatment especially in areas with high proportion of *Pf* cases.
- As per the Drug Policy, Chloroquine is the first line of treatment for malaria. So far, 241 PHCs in 19 States/UTs have been identified as Chloroquine resistant areas, where Sulfadoxine-Pyrimethamine Artesunate Combination Therapy (SP-ACT) has been recommended to treat the *Pf* cases. Newer drugs like injection of Artemisinin derivatives for treatment of severe and complicated malaria have been introduced in the programme in the malaria hard-core areas. Sulphadoxine-Pyremethamine and Artesunate Combination Therapy (SP-ACT) is recommended as the second line for the treatment of *Pf* cases in these areas.
- The process of Quality Assurance for Laboratory Diagnosis for ensuring consistency, reliability and high quality of products and services has been initiated.
- Under integrated vector control initiative, Indoor Residual Spraying (IRS) is implemented selectively only in high risk pockets as per district-wise micro plans.
- Guidelines on uniform evaluation of insecticides have also been developed in collaboration with NIMR, Delhi.
- Under integrated vector management, 1.8 million bed nets were supplied for beneficiaries living below poverty line in rural tribal areas of endemic states. During 2001-02, 0.09 million bed nets were supplied and in the year 2005-06, 4.4 million bed nets are being procured for supply.
- Public-Private-Partnership Schemes on bed net distribution, insecticide impregnation of community owned bed nets have been developed for involvement of NGOs/FBOs/CBOs/PRIs. Modalities for social marketing through public-private partnership have also been initiated.
- Synthetic Pyrethroid tablet formulation for individual use has been introduced and Guidelines on use of SP tablet formulation have been prepared. Large scale field trials on introduction of Long lasting Insecticide Treated Bed nets (LLINs) in the programme are being conducted by MRC (ICMR) to know the efficacy of such bed nets.
- Intensive drive has been launched for promoting use of larvivorous fish in identified water bodies. Currently, 1193 district level and 63644 Block/PHC level hatcheries have been established in the States.
- Training of Health Workers / spray workers, lab. Technicians and Medical Officers are being conducted by the states/districts by involving the Regional Offices and Medical colleges. The curriculum includes field level operations for malaria control, malaria microscopy and management of malaria cases.



- Behaviour Change Communication strategy on malaria has been developed and conveyed to states for implementation.
- Logo on NVBDCP has also been launched and conveyed to all states to give an identity to the programme

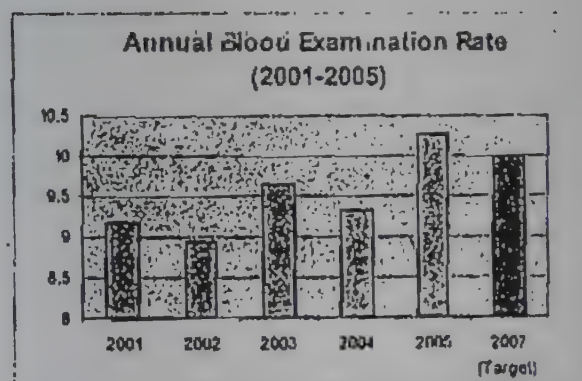
### 2.1.5 Malaria Situation in the Country

- Among the VBD, malaria continues to pose a major public health threat in different parts of the country, particularly due to *Plasmodium falciparum*, as it is sometimes prone to complications, if not treated early. About 95% of population lives in areas conducive for malaria and 80% of malaria burden is confined to 20% of population in high risk areas.

Year	BSC (million)	BSE (million)	Total Positive (million)	Pf %	API	SPR	ABER	Deaths
2001	90.6	90.3	2.09	48.20	2.12	2.31	9.18	1005
2002	91.9	91.6	1.84	48.72	1.80	2.01	8.93	973
2003	99.5	99.1	1.86	47.45	1.82	1.89	9.65	1006
2004	97.5	97.1	1.84	47.82	1.84	1.97	9.33	949
2005	103.9	103.3	1.81	44.16	1.80	1.75	10.26	940
2007 (Target)			1.57		≤1.3		>10%	754

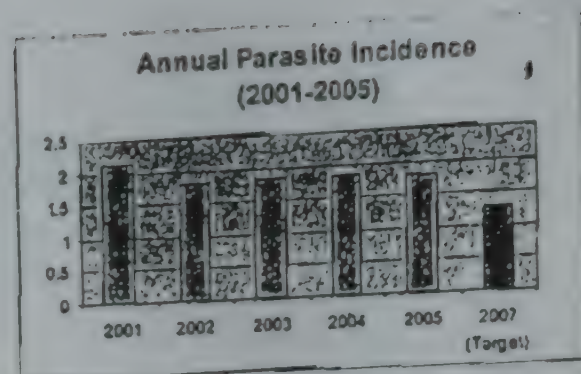
#### Observations:

**ABER:** As the estimated fever rate had been around 10%, with this premise 10% of country population reporting fever is to be screened annually by blood slide examination (the target of annual blood examination rate is 10%). ABER is an indicator of operational efficiency of surveillance system in the programme. Though the target has been achieved, it varies from <5 in 6 states, 5-10 in 11 states to >10 in the remaining 18 states/UTs. Active surveillance is done fortnightly by the house to house visit of MPW (M) visit and as MPW (M) vacancies in the states have been around 50%, the active surveillance remain sub-optimal and the cause of recurrent surge in malaria cases. Low ABER has been observed in the states where there are shortage of Health Workers (Male) & Functional DDC /FTD.

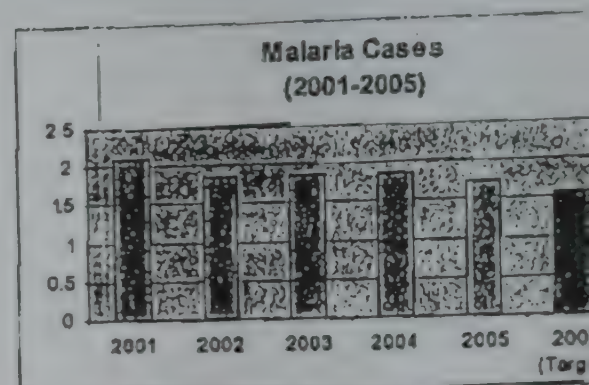




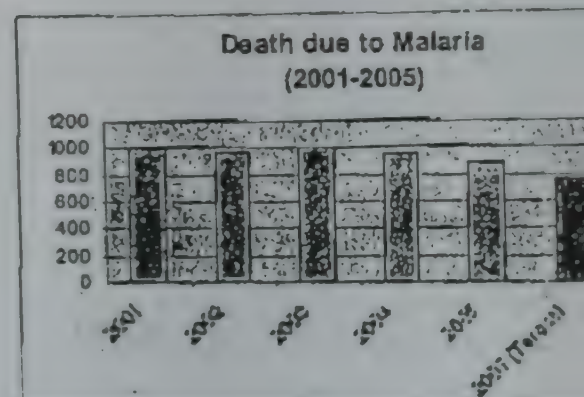
**API:** During the X plan period the API remained static around 1.8. There is a decline of 15% as compared to baseline (2001) data. Annual Parasite Incidence is the number of malaria cases detected per 1000 population. API is dependent upon the successful implementation of the programme strategies. Further, insecticide resistance to conventional insecticides has also increased. When standardization of ABER is done at 10, the corrected API will be 2.30 (2001) and 1.75(2005)



**Malaria Cases:** There has been 13.4% decrease in morbidity in 2005 as compared to baseline data (2001).



**Death:** There has been 6.5% decrease in mortality in 2005 as compared to 2001 (baseline). The reason for high level of mortality due to malaria is due to poor outreach of treatment facilities in difficult and inaccessible areas and development of chloroquine resistance by the parasite.



## 2.1.6 M&E system including status of MIS, Disease surveillance, its quality and utilization

Computerized National Anti Malaria Management Information System (NAMMIS) at National, State and District levels has been developed. Tata Consultancy Services (TCS), New Delhi has been commissioned for developing application software for web-based computerized MIS for NVBDCP. Computerized MIS operational guidelines has been developed and circulated to states. MIS training has been imparted in 585 districts of 35 states. Action initiated for strengthening MIS in these districts by providing additional computers. The states of Goa, Gujarat and Tamil Nadu have already started sending electronic data on malaria through NAMMIS.

### 2.1.7 Constraints

The indicators show a virtual plateau with respect to deaths, API and cases. The slow pace in the attainment of the targets/objectives is due to the following reasons:-

#### 2.1.7.1 Technical:

- Technical setbacks due to emerging drug (Chloroquine resistance in parasites and insecticides resistance (DDT) in vectors). 241 PHCS in 19 states have recorded drug resistance to Chloroquine. 125 PHCs (north-east states) have recorded drug resistance to chloroquin.
- Irrational anti-malaria drug regimen practiced in private sector
- Incomplete treatment/ treatment non-compliance
- As per the present policy, Malathion 25% WDP is a decentralized item and states are bearing the total cost of Malathion for use in DDT resistant areas as an additional requirement. Over the year, the states have expressed their concern for getting Malathion from centre in place of DDT, which is not recommended due to vector resistant.

#### 2.1.7.2 Administrative:

- Shortage of over 50% posts of Health Worker (Male), Health Assistant/ Supervisor (Male), Malaria Inspector, MT (Lab.), Asst. Malaria Officers.
- High attrition of DDC/FTDs. Shortage of more than 25% of DDC/FTDs due to high attrition (non-payment of honorarium).
- Rapid response teams/ district outbreak investigation teams comprising epidemiologists, entomologists, MT (Lab), Insect Collectors are virtually absent in most districts.
- Inadequate attention by local self-govt., corporate sector towards mosquitogenic conditions and man-made malaria and lack of coordination between multiple authorities

#### 2.1.7.3 Operational:

- Inadequate surveillance and case detection in large number of states. Six states record ABER of less than 5%.
- Inadequate strategies for delivery of services in remote/ inaccessible areas. Shortage of sub-centres in a large number of high endemic states viz. Arunachal Pradesh (>50%) Assam (46%), Orissa (30%), Nagaland (28), West Bengal (22%).
- Delay in management/ treatment of *Pf* malaria cases due to delayed reporting of blood smears, delayed referral to hospitals, delayed admission to hospital (poor transport facility). Due to lack of microscopy centres at the periphery, the



HW carries blood smears to the PHC/ CHC once a week and collects the report in the subsequent week.

- Inadequate social marketing skills in upscaling ITNs usage.
- Non-cooperation/ apathy of community towards IRS.
- Weak infrastructure for entomological investigations and epidemic prediction/ forecasting.
- Inadequate supervision and monitoring including operationalization of NAMMIS in all districts.

#### **2.1.7.4 Financial:**

- Delays in release of funds at peripheral levels for programme implementation
- Delay in procurement of supply of goods (drugs, insecticides, lab. commodities etc.)

#### **Mid-course evaluation**

- Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram conducted an evaluation study of NVBDCP in the year 2004. Salient findings of the evaluation study are:
- Orissa, Chhattisgarh, West Bengal and Jharkhand together contributed more than 50% of the malaria positive cases in India and 66% of the of the mortality was contributed by Orissa and West Bengal.
- Active and passive surveillance for malaria were much better in EMCP states compared to non-EMCP states. At the PHC level, the implementation mechanism was also found to be relatively weak. There was delay in radical treatment (from 5 days to 2 weeks).
- The availability of insecticides varied from 50-100 per cent of the requirement. In some places spraying operations were affected due to non-payment of wages to spray workers.
- Study also indicated large-scale use of larvivorous fish under EMCP with involvement of fisheries department.
- Tribal Welfare Department and Panchayati Raj Institutions also supported malaria control activities in many places.
- The Enhanced Malaria Control Project 1997-2005, December was reviewed by the World Bank mission from February 28-March 9, 2005 and noted that there has been significant progress in overall project implementation. The salient observations are given below:
- The program has been successful in shifting emphasis from indoor residual spraying (IRS) to a broader mix of effective and environment friendly control interventions, including early detection and prompt treatment (EDPT), use of insecticide-treated bed nets and stocking of water bodies with larvivorous fish.
- The number of functional Drug Distribution Centers (DDCs), Fever Treatment Depots (FTDs), and Malaria Link Volunteers (MLVs) has increased to 337,095 in EMCP Districts from 37,127 appointed during 2000. Laboratory diagnosis has been strengthened by appointing contractual technicians from private



sectors/NGOs with suitable performance based honorarium. Use of blister packs and rapid diagnostic kits in remote areas has been scaled up.

- 1.8 million ITNs have been distributed in EMCP, non-EMCP areas, including high endemic areas of northeastern states. Operational guidelines on use of ITNs have been developed. Efforts have been made to involve and expand partnerships with NGOs.
- Computerized National Malaria Management Information System (NAMMIS) at National, State and District levels have been developed. The software has so far been deployed in almost all the states excepting few states. Training on NAMMIS has completed in many states/UTs.
- Capacity to plan, budget, and implement programme has been greatly strengthened in all EMCP states (except Jharkhand) as well as non-EMCP states. The quality of implementation in all EMCP districts has greatly improved; although delays in procurement return of SOEs and release of funds still, occasionally, impede progress.
- Formation of Rapid Response Teams as epidemic preparedness measure has been initiated in states/districts. The Directorate of NVBDCP has finalized guidelines for public-private partnership that focus primarily on developing guidelines for district and village-level activities. Meetings with NGOs/CBOs/FBOs/corporate sector have been initiated and planned for expanded role of these organizations in implementation of programme.
- The Enhanced Malaria Control Project (EMCP) with World Bank assistance from 1997 to 2005 has been operational in 1045 PHCs in 100 districts of 8 states (Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Rajasthan and Orissa) predominantly inhabited by tribal population. In the EMCP areas, the number cases have declined from 1.17 m in 1997 to 0.76 m in 2005 (44% decline) and deaths from 522 to 301 (42%). The *Pf* cases reduced from 0.71 m to 0.51 m (28%).

## **2.1.8 Urban Malaria Scheme**

### **2.1.8.1 Objectives**

- To control Malaria in Urban areas.

### **2.1.8.2 Targets and indicators**

Under UMS, anti-larval operations are used against larvae of mosquito vectors to restrict or eliminate their breeding. Anti-larval measures are divided into source reduction, biological and chemical control measures. The target is :

- elimination of breeding at its source

The indicator is:

- density of aquatic stages is the indicator



### 2.1.8.3 Strategies

The following components for vector control strategy under Urban Malaria Scheme have been implemented:

- Weekly recurrent application of larvicides like Fenthion and Temephos
- Use of larvivorous fish, *Gambusia affinis* and *Poecilia reticulata* in ornamental tanks, ponds and other seasonal and permanent water bodies
- Filling up of unused wells and water pools, disilting and deweeding of the margins of the drains and water channels
- Use of legislative measures and prosecution of defaulters for creating mosquitogenic conditions in domestic places by implementation of civic bye-laws.
- Indoor space Spray with 2% Pyrethrum extract diluted to 0.1% in and around 50 houses of positive *Pf* cases
- Use of fogging of insecticide in case of very high densities of *Aedes aegypti* and *An.stephensi*.

### 2.1.8.4 Malaria Situation in Urban Areas

Around 10% of malaria cases are reported from the urban areas. During 2005, a total of 87704 positive cases with 10688 *P.falciparum* cases were detected in urban areas of the country. There has been a decrease of 41.9% of total positive cases and decrease of 45.6% *falciparum* cases over 2004. There have been 52 deaths in 2005 as against 62 in 2004.

Epidemiological situation in towns/cities under Urban Malaria Scheme.

Year	Population	Total cases	<i>P.f.</i> cases	Deaths
2001	81586226	155877	25885	99
2002	88656414	133931	22966	63
2003	93410135	139502	20624	41
2004	95814228	150910	19657	62
2005	101169159	87704	10688	52

In urban areas, large number of people avail Medicare services from the private sector. The reporting system from the private sector is practically nil. Therefore actual malaria disease burden is much more than the reported burden. The hospitals in the cities/towns also provide referral services to malaria cases including the severe and complicated forms of malaria from the catchments areas of the cities/ towns. Therefore there is a need to strengthen the referral facilities and capacity of the hospitals for management of malaria cases.

#### 2.1.8.5 Constraints

- **Increasing urbanization:** The proportion of urban population to the total population has increased in the last few decades. This has been triggered by rural "push" (for earning livelihood and "urban pull" (for availing both Medicare/ education opportunities) phenomenon.
- **Haphazard growth of towns:** Haphazard and unplanned growth of towns has resulted in creation of "urban slum" with poor housing and sanitary conditions promoting vector mosquito breeding potential for malaria, filaria and dengue fever/ Dengue haemorrhagic fever.
- **Drinking water supply:** Restricted water supply has led to water storage practices in artificial containers which have generated breeding potential of *An.stephensi* vectors of urban malaria and *Aedes aegypti*, the vector of DF/DHF
- **Development project with Health Impact Assessment (HIA):** Development project activities without health impact assessment have resulted in malaria outbreaks in short terms and endemic malaria with foci of *P.falciparum* resistance strains in long term.
- **Inadequate health infrastructure:** With rapid growth of population in urban towns, existing staff strength has not corresponding strengthening and is therefore inadequate for service delivery.

#### 2.1.8.6 UMS Budget:

##### Outlays and expenditure (2002-03 & 2006-07)

S.No.	Year	Allocation	Expenditure
1.	2002-03	10.27	10.11
2.	2003-04	10.65	4.76
3.	2004-05	10.00	10.00
4.	2005-06	12.17	3.80
5.	2006-07	8.78	

#### 2.1.9 Total outlay for Malaria (including UMS) during X Plan:

##### Outlays and expenditure (2002-03 & 2006-07)

S.No.	Year	Allocation	Expenditure
1.	2002-03	215.00	202.90
2.	2003-04	208.00	170.21
3.	2004-05	219.00	176.18
4.	2005-06	289.59	233.93
5.	2006-07	351.58	



## **2.2. FILARIA**

### **2.2.1 Objectives**

The National Filaria Control Programme was launched with the following objectives:

- To delimit the problem of filariasis in the country.
- To conduct field studies to evaluate the method of control and
- To train personnel to man the programme.

The objectives of Elimination of Lymphatic Filariasis (ELF) Programme are as under:

- To progressively reduce and ultimately interrupt the transmission of lymphatic filariasis
- To prevent and reduce disability in affected persons through disability alleviation and appropriate management

### **2.2.2 Targets**

Targets as per X Plan document are as under:

- Expansion of Annual Single Dose Mass Drug Administration in phased manner to cover at least 100 filaria endemic districts.
- In rural areas, filaria treatment will continue through primary health care system.
- In addition, the pilot project on annual mass drug administration for filariasis control, initiated in 13 identified districts in 7 States would also be continued. Programme will continue to provide assistance for filaria control as per the existing approved pattern that includes supply of anti-filaria drugs and larvicides/adulticides.
- The States will continue to implement filaria control activities as per the existing pattern.
- In addition, the pilot project on annual mass drug administration for filariasis control initiated in 13 districts of 7 States would also be continued. Based on the results of ICMR study initiated in 9 districts with annual single dose co-administration of DEC+Albendazole in 2001, decision on use of single drug DEC or combination of DEC+Albendazole for mass drug administration will be made. During X Five Year Plan period, this strategy will be extended in a phased manner to cover at least 100 filaria endemic districts.

### 2.2.3 Strategies

Under NFCP in urban areas, the control strategies include;

- Anti-larval measures at weekly intervals with approved larvicides.
- Environmental engineering through source reduction and water management.
- Anti-parasitic measures through detection and treatment of microfilaria carriers and cases.
- IEC through community awareness.

ELF strategies include:

- Annual Mass Drug Administration (MDA) of single dose of DEC (Diethylcarbamazine citrate) for 5 years or more to the eligible population (except pregnant women, children below 2 years of age and seriously ill persons) to interrupt transmission of the disease.
- Home based management of lymphoedema cases and up-scaling of hydrocele operations in identified CHCs/ Distt hospitals /medical colleges.
- Capacity building for home-based management of cases with lymphoedema.

### 2.2.4 Initiatives

- National Health Policy (2002) envisaged the goal of Elimination of Lymphatic Filariasis by the year 2015 in the country. Global Filaria Elimination goal has been set by WHO by the year 2020. In pursuit to achieve the goal set by NHP (2002), the Government of India had launched nationwide annual Mass Drug Administration (MDA) with Diethylcarbamazine citrate (DEC) tablets in single recommended dosage for the population living at the risk of filariasis.
- In 2004, 202 endemic districts of 20 states/UTs in the country with a target population of 407 million were targeted for MDA, in addition to scaling up of home based morbidity management, hydrocele operations in CHCs for alleviation of sufferings among the patients.
- In the year 2005, the MDA had been expanded to 243 endemic districts covering over 500 million people. In addition, special drive was launched for home-based management of lymphoedema and scaling up hydrocele operations in CHCs/District hospitals. The National Filaria Day was launched in Hyderabad on 11<sup>th</sup> November by the Hon'ble Union Minister for Health & Family Welfare and Minister of State for Health & Family Welfare as well as Hon'ble Health Minister, Govt. of Andhra Pradesh along with other dignitaries. Mop-up operations to cover the left over population were held on November 12-13, 2005. The state of Tamil Nadu could not observe MDA due to unprecedented rains and floods.
- The Operational Guidelines on MDA and prototype IEC materials were circulated to all the endemic states/districts. Accordingly, the Action Plans were drawn up and activities were conducted. Massive advocacy drives were



undertaken with the involvement of elected representatives, bureaucrats, media, etc. All sectors including medical colleges, private health care service providers and community volunteers were involved by building their capacity through training. Intensive social mobilization through IEC/BCC activities was also undertaken for successful MDA 2005, apart from media sensitization. Funds for the activities were released to the state societies. Anti-filaria drug i.e. Diethylcarbamazine citrate (DEC) tablets (100 mg each) were supplied to the filaria endemic states by Government of India.

- For monitoring and evaluation of actual drug compliance, the medical college faculties have been involved during 2005 and Directorate of NVBDCP has provided funds and questionnaire formats for independent assessment.

### 2.2.5 Achievements

- As against the target of MDA coverage of 100 districts in X Plan period, 202 districts were covered during 2004 in pursuit to achieve the goal set by NHP (2002). A total of 276.2 million population was administered the drug against eligible population of 380.2 million indicating the coverage rate of 72.6%.
- During 2005, 346.89 million population was covered in 229 districts of 19 states( except Tamil Nadu) against eligible population of 434.49 million indicating the coverage rate of 79.84%. The expansion of MDA could cover more population in comparison to that of year 2004.
- During the year 2005, 488480 cases of lymphoedema and 307985 cases of hydrocele have been enlisted. The line-listing of the cases is in progress in order to assess the magnitude of the disease.
- During 2005, the home based management for lymphoedema cases and hydrocelectomies were intensified. The reports of 7 states namely Bihar, Chhattisgarh, Karnataka, Madhya Pradesh, Maharashtra and Uttar Pradesh indicated that 7678 operations were conducted.
- Microfilaria survey has been instituted as per WHO guidelines through sentinel and random sites in all the filaria endemic districts. During 2005, 788027 persons were examined in 189 districts with an average mf rate of 1.13%.
- The independent evaluation indicated that compliance rate had improved during 2005 as compared to 2004. During 2004, the drug compliance ranged between 24% and 70% whereas during 2005 the drug compliance ranged from 28.9% to 100%. The States/UTs have initiated the efforts to reduce the gap between drug distribution coverage and actual drug compliance.

### 2.2.6 Filaria situation in the country:

Based on the screening of limited population in urban areas only carried out by 206 units, the microfilaria rate ranged from 0.4 to 0.7% and disease rate from 0.7 to 1.4% during the last five years in urban areas. The table below indicates the results of surveys in urban areas and does not reflect true magnitude of the problem or true disease trends. The year-wise Microfilaria Rate and Disease Rate reported by NFPC Units are given below:-



## Filarionetric Indices Collected By NFCP Units

Year	No. of persons examined	No. of Blood smears Positive for microfilaria	Mf Rate %	No. of Filaria Cases	Disease Rate %
2001	2309713	15793	0.68	32808	1.42
2002	4400492	15374	0.35	33727	0.77
2003	2779374	16828	0.61	39039	1.40
2004	2240786	15231	0.68	31443	1.40
2005	2313357	11322	0.49	26702	1.15

The state-wise coverage under Mass Drug Administration during the year 2004 and 2005 is as below:

### State-Wise Drug Coverage during 2004 and 2005

Sl. No.	States	MDA 2004		MDA 2005	
		Targeted Population	Coverage (%)	Targeted Population	Coverage (%)
1	Andhra Pradesh	48663989	84.78	49480091	88.55
2	Assam	4919979	25.42	8929641	44.03
3	Bihar	73076980	81.64	70806240	83.54
4	Chhattisgarh	180503	84.17	13305647	79.04
5	Goa	1369009	97.92	1339959	98.64
6	Gujarat	12808947	45.47	17627487	85.08
7	Jharkhand	17946848	43.17	20441795	74.3
8	Karnataka	9484283	85.22	11223364	89.88
9	Kerala	28111599	86.9	27262858	94.03
10	Madhya Pradesh	10589390	73.74	14380100	83.78
11	Maharashtra	15939528	78.68	24408849	90.44
12	Orissa	23229225	90.11	23091960	90.71
13	Tamil Nadu	28228184	95.18	MDA not undertaken	
14	Uttar Pradesh	58171536	66.4	109177137	73.76
15	West Bengal	45790000	39.58	41301907	60.59
16	A&N Islands	338374	85.85	327241	91.32
17	D & N Haveli	190429	91.13	218542	98.26
18	Daman & Diu	194123	94.96	153070	92.87
19	Lakshadweep	60817	64.53	63424	84.6
20	Pondicherry	926927	94.76	947001	96.63
	<b>Total</b>	<b>380220675</b>	<b>72.65</b>	<b>434486313</b>	<b>79.84</b>



### 2.2.7 M&E system including status of MIS, Disease surveillance, its quality and utilization

NFCP units send their reports in prescribed formats, which are compiled at state level and the data for each state is monitored at the national level. The deficiency relating to incompleteness of data as well as programme implementation is informed to the state authority. The analysis of the data is usually not done at local levels due to shortage of Filaria Control Unit Officer/ Biologist and supportive staff. Therefore the quality of the data in respect of disease surveillance and its utilization as representative samples for the area is questionable.

The introduction of strategies for **elimination of lymphatic filariasis** has necessitated the monitoring of filariasis situation in all the endemic districts. The monitoring of ELF programme has been undertaken at various levels which covers process monitoring viz., assessment of timely implementation of activities as per calendar, assessment of coverage of drug distribution during MDA and compliance of drug (actual drug consumption) for enhancing the drug compliance and assessment of activities for Behaviour Change Communication.

- **Compliance:** Monitoring is done through **Questionnaire surveys** within a limited period of time from the date of MDA considering the memory of individual respondents, which will influence the quality of data. The sampling units are individuals who are interviewed from selected households in the identified villages in rural areas and similar households from selected wards in towns and municipal areas. These surveys also include components relating to compliance, adverse reactions and efficacy of IEC tools employed.
- **Impact evaluation:** The parasitological surveys are done in representative samples as per WHO guidelines from different clusters (such as low, medium and high) within a district. Eight sites (fixed and random) are selected for each district and a minimum of 4000 persons (500 per site) are examined for microfilaria. The detailed guidelines have been provided to states/UTs.
- **Formats for Data Capture:** Planning and implementation of any disease control programme depend on information support. Information is derived from data and hence the quality of information depends on how the data are collected and the nature of the "instrument" employed in the collection procedure. Therefore, formats for data capturing have been circulated to the filaria endemic states/UTs so as to collect the data in a uniform pattern.

### 2.2.8 Constraints

Though in elimination campaign, all the health officials are involved and integrated approach is adopted, major challenges and gaps noticed are:

- Single day MDA throughout the country (covering over 500 million population in 20 states/UTs) requires involvement of huge workforce and massive social mobilization at the grassroots;
- Wide difference between actual drug compliance and reported coverage;

- Limited mainstreaming of ELF in Primary Health care system; and
- Absence of computerized MIS for regular & prompt reporting and feedback.
- Gap between requirement of funds to carry out activities and availability of funds has restricted the social mobilization, mobility, honorarium to drug distributors, hydrocelectomy and management of lymphodema cases.

### **2.2.9 Mid-course correction**

- The NFCP has been evaluated four times by various assessment committees, once in 1961, the second in 1971, the third evaluation was done in 1982 and the fourth in January 1995. The recommendations made by these assessments were considered and have been implemented in the programme from time to time.
- The Technical Advisory Group under the chairpersonship of Director General of Health Services, MOH&FW, GoI was constituted in the year 1998 including experts in the field to review the status of lymphatic filariasis and its control in India, progress of implementation of revised strategy for filariasis control and to suggest modification for effective implementation of policy decisions, if required and to decide programme/policy issues of technical nature as and when required. During the year 2001, the Technical Advisory Group was renamed as National Task Force for Lymphatic Filariasis Elimination. The group reviews the programme frequently and in the past has reviewed the programme on 9 November 1998, 12 September 2000, 21 December 2001, 28 October 2003 and 22 March 2006. The strategies under the programme are implemented as per the recommendations of the group.

## **2.3 KALA-AZAR**

### **2.3.1 Objectives**

- Elimination of Kala-azar by 2010

### **2.3.2 Target and Indicators**

- The target is to bring down kala-azar incidence to less than one case per 10,000 population at sub-district level.

#### **The Indicators are**

- Reduction in the annual incidence and mortality due to kala-azar
- 100% coverage of villages with DDT in the kala-azar endemic districts.
- Reduction in the vector densities as a result of Integrated Vector Management.



### 2.3.3 Strategy

- Interruption of transmission through vector control by undertaking two rounds of DDT spraying annually in areas of Primary Health Centres reporting kala-azar incidence. In addition, promotion of environmental and personal protection measures.
- Case detection and treatment through the existing primary health care system supplemented with periodic annual active searches (Kala-azar Fortnight) for case detection followed by free treatment of all Kala-azar cases. Treatment compliance to be ensured by a patient coding system, whereby all patients being treated in government institutions or non-government sector, can be tracked to village level.
- Health education for social mobilization through all probable approaches including NGOs, voluntary and private agencies to ensure community awareness of the disease prevention, treatment and availability of free diagnostic and treatment facilities. Social mobilization is an integral part of the programme.
- Capacity building at all echelons of programme implementation. All the personnel involved in programme implementation, various stakeholders, partners and community, the ultimate beneficiaries, shall be provided with appropriate support for awareness, skills and specific roles to be performed to achieve the expected outcomes. Both institutional and individual capacity building would be part of the strategy.
- Monitoring, Supervision and Evaluation within all programme implementation levels as well as through Kala-azar coordinators to be posted at district, state and national levels.

### 2.3.4 Initiatives and Achievements

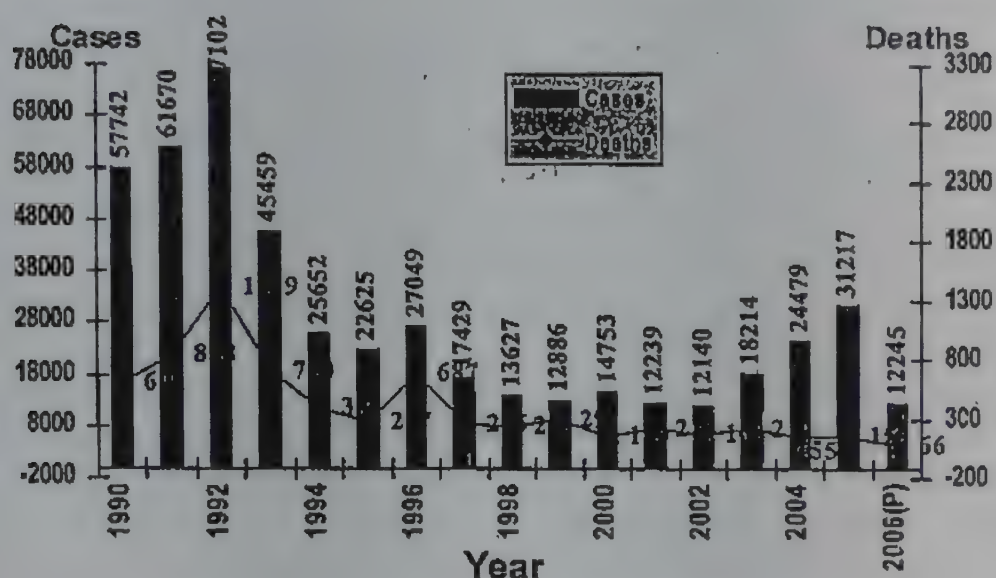
- **Active search and Effective Treatment:** Currently, a lot of effort is going into active search of cases through campaigns. Simpler diagnostic procedure and availability of oral drug are likely to substantially improve case detection output, as more and more cases will get diagnosed, and come forward for simpler treatment.
- **Programme Management:** The kala-azar elimination programme management is being strengthened with placement of coordinators at the national and state levels, for more intensive monitoring of the programme activities.
- **A media plan and media kit** are being developed to promote community involvement in the programme activities.

### 2.3.5 Kala Azar situation in the Country

Kala-azar incidence is being recorded in 32 districts of Bihar, 11 districts of West Bengal, 4 each in UP and Jharkhand. An estimated 129 million population is living at risk of kala-azar. The annual incidence of disease in the three states reveals an

increase initially (1990-92) followed by decline (1993-95). There has been an overall decline of 75% in kala-azar cases in 2005 as compared to 1990, the year of commencement of kala-azar control programme. The state of Bihar contributes 70-80% of the total disease burden in the country. In the endemic state, the disease affects the poor and marginalized people.

### ACHIEVEMENTS – TRENDS OF KALA-AZAR IN INDIA



#### 2.3.6 M & E system including status of MIS, Disease surveillance, its quality & utilization

- Data on number of cases & deaths delayed and underreported.
- State/districts requested to provide age & gender-wise information up to sub-centre level.
- Proper monitoring & analysis of data at sub-centre/PHC/district level lacking.
- Poor monitoring & reporting of spray completion reports.
- Information on number of PKDL cases inadequate.
- All endemic districts have reliable data on incidence of kala-azar.
- Kala-azar endemic states are regularly monitored through monitoring visits by and officers staff from the Directorate of NVBDCP, R.D. office, Patna.

#### 2.3.7 Constraints

##### 2.3.7.1 Administrative

- Kala-azar is Notifiable Disease in Bihar. In other three affected states, similar step needs to be taken up.



#### **2.3.7.2. Technical**

- Active Case Search schedules not properly followed.
- Quite a large number of patients receive treatment through private sector with consequent under-reporting.
- Indiscriminate use of medicines and incomplete treatment by the private sector service providers.
- Drug unresponsiveness, particularly to first line drug Sodium Stibo Gluconate (SSG) has increased in some areas.
- Treatment protocols are not followed properly. Treatment cards recommended for use under the Programme often not used.
- Detection of PKDL and its treatment are not at the optimum level. No networking with dermatologists.
- Coverage and quality of IRS unsatisfactory.
- Emerging trend of drug unresponsiveness, to first line drug Sodium Stibo Gluconate (SSG).
- Complete treatment compliance is a problem as presently used drugs, injectables /parenteral infusion with long duration regimen.

#### **2.3.7.3 Operational**

- Political commitment exists but insufficient monitoring of control interventions and resource utilization; variable absorption capacity of states in relation to utilization of funds/commodities.
- Limited social mobilization. Behaviour Change Communication needs scaling up to increase the visibility and acceptability of Kala-azar Elimination programme.

#### **2.3.7.4 Financial**

- Non-receipt of funds by the Districts/PHCs due to non-release by states due to administrative delays.
- Non-submission of SOE & UCs by the States hampering release of funds by the GOI

#### **2.3.8 Mid Course Correction**

- Active case search operations are being organized on a half yearly basis through the Kala-azar Fortnight in every endemic district.
- Field visits to the sprayed areas by teams from the Directorate NVBDCP/Coordinators, NICD, RMRI/ICMR to ensure adequate supervision, monitoring of IRS in the endemic villages.
- To improve diagnosis of kala-azar at the peripheral level, rapid dipsticks coated with rK39 are being introduced into the programme. r K39, a rapid dip stick test, has been thoroughly investigated in India and elsewhere and is known to be highly sensitive and specific.

- miltefosine, a safe and effective oral drug is being introduced, as the first line of treatment in the programme on a pilot basis in 10 districts of Bihar, Jharkhand and West Bengal 0.86 million 50 mg capsules of miltefosine are being procured for supply to these districts. This drug has been registered for use in India. Necessary guidelines have been circulated for its use to the states.

### 2.3.9 Outlays & Expenditure

Until 1989-90, no specific funds were provided for Kala-azar control and the assistance was provided out of National Anti Malaria Programme provision for insecticide. Planning Commission concurred enhanced Govt. of India assistance for Kala-azar control since 2001-02, so that Govt. of India could provide operational cost including spray wages to enable States to implement programme strategy effectively. Since December 2003, Govt. of India provides 100% assistance in cash and kind to four endemic states namely, Bihar, Jharkhand, Uttar Pradesh and West Bengal under Kala-azar Control Programme for insecticides and anti-Kala-azar medicines as well as resource based IEC, capacity building and case search activities and operational wages for spray workers. Govt. also meets freight charge for DDT transportation up to consignee level.

Details of assistance provided since 2001-02 by the Govt. of India and expenditure incurred by the four affected states are as under:

(In Rs. crores)		
Year	Approved Budget	Expenditure
2002-03	20	3.92
2003-04	37	30.79
2004-05	50	40.48
2005-06	58.86	26.5
2006-07	15	

## 2.4 DENGUE / DHF

### 2.4.1 Objectives :

- To prevent mortality due to dengue/DHF
- To reduce morbidity due to dengue/DHF.

### 2.4.2 Targets and Indicators :

- Reduction in Case fatality rate associated with dengue/DHF
- Reduction in frequency of outbreaks.

### 2.4.3 Strategy for Control of Dengue/DHF

- surveillance of disease and vector through sentinel sites,



- early case reporting and management of dengue cases,
- vector control mainly through source reduction, personal protection, Behaviour Change Communication campaign and inter-sectoral convergence for mosquito breeding by source reduction
- Enactment of municipal bye-laws / legislative measures

#### 2.4.4 Initiatives taken & Achievement :

- Strengthening the surveillance for monitoring the incidence of dengue cases and deaths in the country
- Establishment of sentinel sites
- To gear-up the states and municipal bodies for enactment of legislative measures

#### 2.4.5 Dengue situation in the Country

Dengue/DHF has been reported every year in the country resulting in deaths as well due to DHF/DSS. The highest number of cases (16517) and deaths (545) due to Dengue/DHF was reported in the year 1996 followed by 12754 cases and 245 deaths in the year 2003. In the year 2005, a total of 11985 cases and 157 deaths were reported. The case fatality rate during this period ranged between 1.08% to 3.29%. Cyclical behaviour of the disease has been observed depending on the contribution by different variables.

The epidemiological situation of the country as per the report received from the affected states since the year 2002 is as follows:

#### State-Wise Dengue Cases and Deaths in the Country

Sl. No.	State	2002		2003		2004		2005		2006 (P*)	
		C	D	C	D	C	D	C	D	C	D
1	Andhara Pradesh	61	3	95	5	230	1	99	2	0	0
2	Bihar	1	0	0	0	0	0	0	0	0	0
3	Chandigarh	15	0	0	0	0	0	2	0	0	0
4	Delhi	45	2	2882	35	606	3	1023	9	0	0
5	Goa	0	0	12	2	3	0	1	0	0	0
6	Gujarat	40	0	249	9	117	4	454	11	52	1
7	Haryana	3	0	95	4	25	0	180	3	0	0
8	Karnataka	428	1	1226	7	291	2	587	17	31	0
9	Kerala	219	2	3546	68	686	8	1009	8	326	2
10	Maharashtra	370	18	772	45	856	22	349	56	192	0
11	Sikkim	0	0	0	0	12	0	0	0	0	0
12	Punjab	27	2	848	13	52	0	251	2	0	0
13	Rajasthan	325	5	685	11	207	5	370	5	52	2
14	Tamil Nadu	392	0	1600	8	1027	0	1128	8	190	0
15	Uttar Pradesh	0	0	738	8	8	0	100	1	0	0

16	West Bengal	0	0	0	0	32	0	6375	34	0	0
17	Pondicherry	0	0	6	0	0	0	0	0	0	0
18	D&N Haveli	0	0	0	0	1	0	0	0	0	0
	<b>TOTAL</b>	<b>1926</b>	<b>33</b>	<b>12754</b>	<b>215</b>	<b>4153</b>	<b>45</b>	<b>11928</b>	<b>156</b>	<b>843</b>	<b>5</b>

P\*= Provisional upto 26.6.06

#### 2.4.6 M & E system including status of MIS, Disease surveillance, its quality & utilization

- Monitoring of dengue cases are done at the state level on receipt of information about cases and deaths and the compiled data is transmitted to Govt. of India.
- State/districts are also requested to monitor age & gender wise information.
- Analysis of data and technical feedback is provided to states.
- Data on monitoring of dengue vector is poor. In the report of UMS towns, information on dengue vector is incorporated.
- Entomological indices i.e. House Index (HI), Container Index (CI) & Breteau Index (BI) are monitored for feedback.

#### 2.4.7 Constraints during X Plan :

- Absence of any vaccine.
- Changes in the environmental conditions making suitable for the vector & virus propagation from urban to rural areas.
- Breeding, resting & feeding behaviour of *Aedes aegypti* in close proximity of human population in domestic and peri-domestic conditions makes more difficult for elimination of breeding sites.
- Lack of infra-structure separately for the dengue control activities.
- Inadequate awareness leading to non-cooperation of community in vector control measures.
- Inadequate inter-sectoral coordination.

#### 2.4.8 Mid Course Correction

- serological surveillance has been Intensified by setting up sentinel sites
- Strengthening of referral services
- Prioritization of areas for control operations were taken up on the basis of vector prevalence
- Capacity building to medical & paramedical staff.

#### 2.4.9 Outlays and Expenditure

- The need based assistance is provided to states/UTs within the overall allocated funds under NVBDCP



## **2.5 JAPANESE ENCEPHALITIS**

### **2.5.1 Objectives during the X Plan**

- To prevent mortality due to Japanese Encephalitis
- To reduce morbidity due to Japanese Encephalitis

### **2.5.2 Targets for X Plan Period**

- Prevention of Outbreaks
- Facilitation of Institutional Strengthening for diagnostic facilities

### **2.5.3 Strategies during the X Plan**

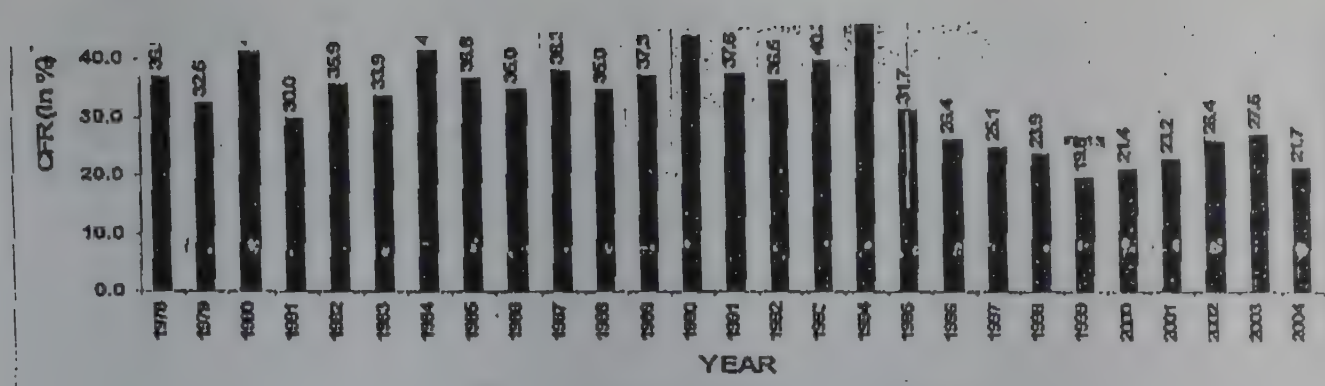
- Early diagnosis & prompt treatment and rehabilitation.
- Vector Control.
- Prophylaxis – Vaccination and mosquito proofing of pig-sties.
- Extensive IEC through health education.
- Training of medical officers for the management of cases.

### **2.5.4 Initiatives**

- It was proposed that during the X plan, issue of use of available JE vaccine to be examined by the UIP after due considerations on operational feasibility, cost- effectiveness, logistics, etc. Necessary technical assistance in identifying high-risk areas/groups is to be provided by NVBDCP. Considering the value of vaccination in prevention of JE, the Govt of India has launched a JE vaccination programme for children between 1 and 15 years of age in 11 districts of 5 states (Uttar Pradesh, Bihar, Assam, Karnataka, West Bengal). This has been made an integral component of Universal immunization Programme in a phased manner using single dose live attenuated SA-14-14-2 vaccine. On the basis of availability of vaccine, plan for the other district is being developed. Integrated Training is being conducted for medical college faculties on vector borne diseases including JE.

### **2.5.5 Achievements**

- The worst affected states with the problem of JE include Uttar Pradesh, Assam, Andhra Pradesh, Goa, Haryana, Karnataka, Kerala, Manipur, Tamil Nadu, Maharashtra, Bihar and West Bengal. As per reports received from state health authorities, during the year 2005, total 6727 cases and 1682 deaths due to suspected Japanese Encephalitis were reported from 14 states in the country. The trend of the disease since 1978 is below:



From the graph above, it is clear that JE is an epidemic prone disease with seasonal and cyclic trend. With the available control measures, it was not possible to bring any change in the disease trend & cycles. However there has been improvement on case management and case fatality rate as shown below:

#### 2.5.6 JE situation in the country during X Plan Period

- The incidence of JE in the country during the last five years (during X five year plan) as per the reports received from the states/UTs is given below:-

##### Year-wise distribution of J.E. cases and deaths

Year	Cases	Deaths
2001	2061	479
2002	1765	466
2003	2568	707
2004	1714	367
2005	6727	1682
2006 (upto May)	72	30

During the year 2005, maximum cases and deaths due to JE have been reported from the states of Uttar Pradesh followed by Bihar, Assam, Karnataka, Maharashtra, Tamil Nadu and Haryana in the same order. An outbreak of Japanese Encephalitis was reported in eastern part of Uttar Pradesh and a total of 6061 cases with 1500 deaths were reported from 34 districts. During the year 2005, state-wise cases and deaths due to suspected JE as reported by the State Health Authorities since 2001 are given below:



## State-Wise Cases and Deaths Due To Suspected Japanese Encephalitis

Sl. No.	Affected States/ UTs	2001		2002		2003		2004		2005(P)		2006(P)	
		C	D	C	D	C	D	C	D	C	D	C	D
1	Andhra Pd	33	4	22	3	329*	183*	7**	3**	34	0	0	0
2	Assam	34 3	200	472	150	109	49	235	64	145	52	3	3
3	Bihar	48	11	8	1	6	2	85	28	192	64	1	0
4	Chandigarh	0	0	4	0	0	0	0	0	0	0	0	0
5	Delhi	0	0	1	0	12	5	17	0	6	0	1	0
6	Goa	6	2	11	0	0	0	0	0	4	0	0	0
7	Haryana	47	22	59	40	104	67	37	27	46	39	0	0
8	Karnataka	20 6	14	152	15	226	10	181	6	122	10	0	0
9	Kerala	12 8	5	0	0	17	2	9	1	1	0	3\$	3\$
10	Maharashtra	12 6	1	119	16	475	115	22	0	51***	0** *	1	0
11	Manipur	0	0	2	1	1	0	0	0	1	0		
12	Punjab	0	0	10	2	0	0	0	0	1	0	0	0
13	Tamil Nadu	0	0	0	0	163	36	88	9	51	11	6	0
14	UP	10 05	199	604	133	1124	237	1030	228	6061 ^	15 00	57 #	24 #
15	W.Bengal	11 9	21	301	105	2	1	3	1	12	6	0	0
	Grand Total	20 61	479	1765	466	2568	707	1714	367	6727	16 82	72	30

C = Cases, D = Deaths, P = Provisional, \* viral Encephalitis (31 cases and 4 Deaths Confirmed due to JE)

\*\* = Lab. Confirmed JE Cases     \$ = Viral encephalitis

\*\*\* = In addition, 66 cases and 30 deaths due to Chandipura Encephalitis reported from Maharashtra State.

^ = Including 448 cases and 109 deaths from Bihar and 31 cases 4 death from Nepal and 1 case & Nil death from MP reported from BRD Medical College, Gorakhpur

# = Suspected JE have been reported from the state on 12.05.2006. Total 32 samples were tested and all found negative for JE.

and utilization

- Monitoring is being done through periodic reviews/monthly reports and field visits for Japanese Encephalitis. During outbreak period, States send daily epidemiological reports along with action taken report.

#### **2.5.8 Constraints during X Plan**

- Amplifier hosts playing key role in JE transmission viz. pigs and Ardid birds are very difficult to control for various social and operational reasons.
- Existing poor surveillance of JE in the country.
- Inadequate diagnostic and case management as well as rehabilitative facilities.
- States are required to tackle the problem with their own resources that are also usually managed by way of diversions, as no specific programme for prevention and control of Japanese Encephalitis exists in State sector also.
- Till 2005, only killed mouse brain Japanese Encephalitis inactivated vaccine was available, in the country There are several constraints in its wide scale use, like limited indigenous production that is grossly inadequate in comparison to population at risk, high cost, and booster dose after initial 3 dose schedule every 3<sup>rd</sup> year.

#### **2.5.9 Mid-course correction**

- Prevention and control strategies for JE were reviewed by expert group and revised strategies communicated to the states from time to time.
- States have been advised to establish sentinel sites for monitoring the situation and manage the case to reduce case fatality rate
- Indoor Residual Spray as routine control measures was not recommended by the expert due to exophilic behaviour of the JE vector mosquitoes, hence revised guidelines are being circulated.

#### **2.5.10 JE Outlays during X Plan**

- During 10<sup>th</sup> Five Year Plan, the total allocation in Plan outlay for NVBDCP is Rs.1349 crores. There was no separate budget outlay for JE control programme. During the year 2003, total amount of Rs.56 lakhs was released to JE endemic states for IEC and training activities. Relevant logistics of about Rs.1.47 crores such as drugs, ventilators, JE diagnostic kits, etc. were provided to Uttar Pradesh for control of JE outbreak during the year 2005.
- During the year 2005, funds were provided to states for conducting Integrated Training on vector bone disease control programme including JE. Medical College faculties of 100 medical colleges were trained as state core team for training of district teams for management of vector bone disease including Japanese Encephalitis.



## **2.6 CAPACITY BUILDING**

### **2.6.1 Background**

Capacity building through training of various categories of health functionaries in vertical programmes like National malaria Control Programme/National Malaria Eradication Programme, National Filaria Control Programme and National Kala-azar Control Programme was an in-built component for imparting knowledge and strengthening the skills in respect of prevention and control strategies and approaches. Training of the health workers was relatively easy during the days of vertical programmes and a large proportion of the workers were covered. It also yielded long lasting results, as the health personnel were continuously re-oriented. However, the training component underwent changes as and when the programme changed its course.

After 1977, with the introduction of Multipurpose Health Workers Scheme in the country, the training needs have greatly changed and the workers at the periphery were required to undergo training in multifarious activities. With the Modified Plan of Operation in 1977, realizing the gap in service delivery in outreach community volunteers was involved for strengthening the peripheral service delivery. Besides, the Chief Medical and Health Officers at district level are responsible for implementation of all the health programmes. Four to five Dy. Chief Medical Officers have their areas of responsibilities. All the above factors necessitated saturation training of all categories on activities related to National Vector Borne Disease Control Programme (NVBDGP).

### **2.6.2 Objectives**

The National Health Policy (2002) has clearly delineated the goals for vector borne diseases. However, the specific objectives for capacity building are:

- To enhance the skill of the medical officers of PHC/CHCs in management of severe and complicated of vector borne diseases especially *Pf* malaria.
- To build up the capacity of the paramedical workers for analyses and interpretation of surveillance data (epidemiological & entomological) for prediction of epidemic/ outbreaks.
- To build up the capacity of the peripheral workers in service delivery, referral services for severe and complicated cases and to implement the vector control strategies.

### **2.6.3 Targets and Indicators**

- Training of Medical College faculties of all 219 medical colleges across the country
- Presence of trained core team of trainers in all the states and all levels



- To train all the 30946 PHC & CHC level medical officers across the country
- To train at least 50% of private medical practitioners on national strategies for prevention and control of VBDs
- To have a trained laboratory technician in all the malaria laboratories in the country.
- To train all the health volunteers in the country in service delivery

#### 2.6.4 Strategies

After analysis of the performance of health workers, identifying reasons for the constraints associated with the implementation of the NVBDCP, an integrated training programme have been designed for different categories of health care functionaries during 2004-05 in consultation with the experts from medical colleges and from the fields of vector borne diseases. This Integrated training programme aims to conduct training at three levels – **tertiary, secondary and primary.**

The integrated training guidelines aim to standardize the training contents for each category of the health care workers as well as non health care functionaries in order to improve the quality of training and to improve in delivery of services. For this purpose integrated course curriculum has been developed for all three categories. Besides training of Private Medical Practitioners and other inter-sectoral partners are also conducted sensitize them about the National Strategies for VBD control. Specialized trainings for entomologists and laboratory technicians through some identified Apex Institute having expertise on the concerned field.

**Core of trainers:** At each level: tertiary, secondary and primary, has been developed in all states in a time bound manner to upscale training. Trainings are being conducted in the following way:

**Tertiary level:** In every medical college, a group of 4-5 faculty belonging to Departments of Medicine, Communicable Diseases/ Infectious Diseases, Pathology/Microbiology/ Parasitology Paediatrics/ Community Medicine has been identified as core team of trainers and trained by the central level of trainers/ resource persons. The focus of this three days training is epidemiology, early diagnosis & prompt treatment, management of serious cases and sentinel surveillance, etc. These core team in turn impart training to the district level functionaries. The Department of Social and Preventive Medicine/ Community Medicine have been identified as the focal point for coordinating training for district level trainers in each medical college.

**Secondary level:** In each district, a core group of trainers belonging to disciplines of Medicine, Paediatrics, and Pathology and Public Health has been identified and trained by the tertiary level trainers. The content of training is the same as that of tertiary care level trainer's training. However, due attention has been paid on prevention through personal protection and vector control measures. For operational reasons districts are divided among the identified Medical colleges.



Duration of this training is also three days. This core group, in turn train the primary level health functionaries or block level trainers.

**Block level:** team of trainers train all the health supervisor and health workers in that block as per guidelines of NVBDCP. Duration of the training shall be of two days. These trained health workers train the health volunteers and trainings are organized at the sector level PHCs.

Training requirement for each category of health care functionary is being assessed at the Directorate by analyzing the achievements/performance of the state in implementation of the programme strategies for effective prevention and control of vector borne diseases. Funds for all these trainings are allocated from the Dte., along with the modalities for utilization of funds are provided to the states.

### **2.6.5 Initiatives**

- Paradigm shift in training component from disease specific to integrated programme.
- Uniform integrated training curricula being followed across the country for trainings of all levels of health care providers engaged in the prevention and control of vector borne diseases.
- Involvement of medical colleges improved the quality of trainings, referral services and management of severe and complicated cases.

### **2.6.6 Achievements**

- State core team of trainers trained in 24 states till June 2006. Total 689 medical college faculties have been trained from 100 Medical Colleges. States which do not have medical college, specialists from the State Level Hospital have been trained as core team of trainers.
- technical guidance and rapid response in case of emergency ( outbreak)
- Data base for the technical resource pool in the country is being maintained at the Directorate.
- Technical notes on various aspects of prevention and control of vector borne diseases in the form of Director's Desk is being issued time to time. These are also placed at the website for easy access to the end users.
- Training modules for the community volunteers have been prepared and distributed to the States. The states have been requested to translate them to the local languages.

### **2.6.7 Constraints**

- Trainings receive relatively low priority at the PHC level mainly due to absence sufficient manpower; the nominated staffs were not released to attend the trainings.
- Frequent transfer of trained medical officers to different disciplines.
- Large scale of health man power to be trained and retrained.

- frequent revision required in the training modules in view of the newer technology, new diagnostic tools, newer drugs etc.
- States are not utilizing funds allotted for training in time, delaying in submission of SOE and approval of the training action plan for the next financial year.

### 2.6.8 Mid course correction:

With the introduction of the umbrella programme for vector borne diseases, the NVBDCP and introduction of NRHM, the needs of training programme have changed and need was felt for capsular training of all the health programmes for different levels of functionaries. However, till such capsular training becomes a reality, trainings under NVBDCP have been designed as an integrated capsular training for all vector borne diseases.

### 2.6.9 Outlays and expenditure (2002-03 to 2006-07)

The budget allotted for training component of NVBDCP has been from EAC head under the World Bank assisted Enhanced Malaria Control Project for the entire country. However, in the year 2005-06 and 2006-07 funds have been allocated under domestic budget as well. The assistance provided from Govt. of India in cash for training component is indicated below:

#### Outlay for Capacity Building

Sr. No.	Year	Funds Allotted for trainings (Rs. in crores)		
		EAC	DBS	Total
1	2002-03	1.58	0	1.58
2	2003-04	1.22	0	1.22
3	2004-05	1.23	0	1.23
4	2005-06	2.89	2.49	5.38
5	2006-07	3.00	2.50	5.50

### 3. TOTAL OUTLAY DURING X PLAN NVBDCP

National Vector Borne Disease Control Programme is category II centrally sponsored programme based on 50:50 sharing between the Centre and States. However, seven North Eastern States have been approved for 100% central assistance w.e.f. December 1994. Total Plan Outlay for X Plan was Rs.1349.00 crores for all the vector borne disease control programmes namely malaria including EAC component under EMCP, filaria and Kala-azar as well as for need based assistance for dengue and Japanese encephalitis. Details of central sector budget allocation and expenditure for malaria control (including filaria, Kala-azar) are given below:-



**Year-wise NVBDCP Budget outlay****(Rs. in Crores)**

<b>Year</b>	<b>Approved Budget (B.E.)</b>	<b>Approved R.E.</b>	<b>Actual Expenditure</b>
2002-03	235.00	214.00	206.81
2003-04	245.00	240.11	201.01
2004-05	269.00	246.00	216.66
2005-06	348.45	264.22	260.43
2006-07	371.58		

Though there is gap between the outlay, Revised Estimate and Expenditure, the progress is evident made during 2005 -06 against approved RE.

## **PART II – PROPOSED XI FIVE-YEAR PLAN**

### **1. INTRODUCTION**

The existing activities for prevention and control of malaria and other vector borne diseases as in X Plan would be continued in XI Plan period with added emphasis on identified activities as and when warranted during the concerned annual plan. The approaches initiated under Enhanced Malaria Control Project with World Bank assistance would be sustained through the support of Domestic Budget and supplemented with GFATM and World Bank assisted Enhanced Vector Borne Disease Control Programme (VBDCP). Further the ongoing activities under Kala-azar Control Programme for the elimination of the disease by 2010, Elimination of Lymphatic Filariasis by 2015 and Prevention & Control of Japanese Encephalitis and Dengue/DHF will also be continued with appropriate changes in an integrated manner under the umbrella of National Vector Borne Disease Control Programme.

#### **1.1 Goals and objectives of National Vector Borne Disease Control Programme**

At present, National Vector Borne Disease Control Programme is being implemented for prevention and control/elimination of malaria, filariasis, Kala-azar, Dengue and Japanese Encephalitis with the following vision and mission:

Vision of NVBDCP envisages a well informed and self-sustained, healthy India free from vector borne diseases with equitable access to quality health care.

The Mission of the Programme is integrated and accelerated action towards reducing mortality on account of malaria, dengue and Japanese Encephalitis by half and Elimination of Kala-azar by 2010 and Elimination of Lymphatic Filariasis by 2015. The vision and mission of NVBDCP are in tandem with the National Health Policy goals for Vector Borne Diseases. To consolidate the efforts for realizing NHP goals, the Govt. of India has launched National Rural Health Mission in April 2005. The Action Plan includes improvement of the availability of and access to health care to people, especially for those residing in rural areas, the poor, women and children by positioning a village based Accredited Social Health Activist, fostering public-private partnership, inter-sectoral convergence, augmentation of community empowerment and participation and promotion of healthy lifestyles. The Mission is basically a strategy for integrating ongoing vertical health programmes and sharing collateral benefits for collective improvement including in the statistics for communicable diseases. These are analogous to the Millennium Development Goal 6 of combating HIV/AIDS, malaria and other diseases; and Target 6 of halting and beginning to reverse the incidence of malaria and other major diseases.



## **PART II – PROPOSED XI FIVE-YEAR PLAN**

### **1. INTRODUCTION**

The existing activities for prevention and control of malaria and other vector borne diseases as in X Plan would be continued in XI Plan period with added emphasis on identified activities as and when warranted during the concerned annual plan. The approaches initiated under Enhanced Malaria Control Project with World Bank assistance would be sustained through the support of Domestic Budget and supplemented with GFATM and World Bank assisted Enhanced Vector Borne Disease Control Programme (VBDCP). Further the ongoing activities under Kala-azar Control Programme for the elimination of the disease by 2010, Elimination of Lymphatic Filariasis by 2015 and Prevention & Control of Japanese Encephalitis and Dengue/DHF will also be continued with appropriate changes in an integrated manner under the umbrella of National Vector Borne Disease Control Programme.

#### **1.1 Goals and objectives of National Vector Borne Disease Control Programme**

At present, National Vector Borne Disease Control Programme is being implemented for prevention and control/elimination of malaria, filariasis, Kala-azar, Dengue and Japanese Encephalitis with the following vision and mission:

Vision of NVBDCP envisages a well informed and self-sustained, healthy India free from vector borne diseases with equitable access to quality health care.

The Mission of the Programme is integrated and accelerated action towards reducing mortality on account of malaria, dengue and Japanese Encephalitis by half and Elimination of Kala-azar by 2010 and Elimination of Lymphatic Filariasis by 2015. The vision and mission of NVBDCP are in tandem with the National Health Policy goals for Vector Borne Diseases. To consolidate the efforts for realizing NHP goals, the Govt. of India has launched National Rural Health Mission in April 2005. The Action Plan includes improvement of the availability of and access to health care to people, especially for those residing in rural areas, the poor, women and children by positioning a village based Accredited Social Health Activist, fostering public-private partnership, inter-sectoral convergence, augmentation of community empowerment and participation and promotion of healthy lifestyles. The Mission is basically a strategy for integrating ongoing vertical health programmes and sharing collateral benefits for collective improvement including in the statistics for communicable diseases. These are analogous to the Millennium Development Goal 6 of combating HIV/AIDS, malaria and other diseases; and Target 6 of halting and beginning to reverse the incidence of malaria and other major diseases.

to be addressed by the strict implementation of civic bye-laws and building bye-laws by the enforcement agencies.

**2.1.7 Natural hatcheries** should be maintained by the fisheries department for ensuring the supplies of fish seeds round the year to the districts, PHCs where the volunteers /NGOs/CBOs/FBOs/PRIs would sustain and maintain natural hatcheries for their continuous use.

**2.1.8 Supervision and Monitoring:** The supervision and monitoring at state/district level will be addressed by providing vehicles to the states programme officers and district malaria officers in a phased manner. Similarly, there is a shortage of funds under domestic travel at the state level, payment of TA/DA to the supervisory staff is to be made available by GOI.

## **2.2 Objectives**

Reduce malaria morbidity & mortality by 50% by 2012 (Base line 2006).

## **2.3 Targets and Indicators**

### **Targets**

- ABER over 10 per cent
- API 1.3 or less
- 25 per cent reduction in morbidity and mortality due to malaria by 2010 and 50 per cent by 2012.

### **Indicators**

- Percentage of blood smears examined from population under surveillance during the year.
- Number of laboratory confirmed malaria cases per 1000 population (API)
- Number of malaria deaths per 100,000 population

## **2.4 Strategies**

The basic approach for vector borne disease control involves a strategy directed against the parasite and vector, and to enlist involvement of community in practicing various preventive measures. Based on this concept following major strategy is proposed to be adopted under the National Vector Borne Disease Control Programme

### **Disease Management**

- Early case detection and complete treatment
- Strengthening of referral services









pregnancy; sustainable effective strategies of reduction of malaria during pregnancy; expansion of testing of vector resistance to insecticides in non-EMCP areas; studies on determination of relevant contributions of different vector control methods, development of models to predict and detect malaria epidemics are the priority areas for research during EVBDCP. Studies on the field level of efficacy of newer interventions like use of rapid diagnostic kits by the community volunteers for detection of Pf malaria and appropriate treatment in drug resistant Pf predominant areas would be taken up. Efficacy of blister packs of chloroquine and primaquine in Pf predominant areas would be taken up. Efficacy of blister packs of SP and ACT in Pf predominant areas where chloroquine resistance has been reported would be taken up.

- Strengthening of referral services will be carried out by providing equipment and drugs to manage the severe & complicated malaria cases.
- Medical audits and research in the Increasing incidence of death due to Pf malaria would be taken up as malaria related mortality is to be reduced by 50 % by 2010 as per the National Health Policy -2002.
- Studies on the field level of efficacy of newer interventions like use of rapid diagnostic kits by the community volunteers for detection of Pf malaria and appropriate treatment in drug resistant Pf predominant areas would be taken up.
- **Insecticide Resistance in Vectors:** The alternative vector management strategies would be implemented for overcoming the increasing levels of vector resistance as the alternative insecticides are costlier and due to financial constraints of States are not being procured. Additional data base would be generated for use of appropriate insecticide to overcome the vector resistance. Universities in states would be encouraged to take up such studies. Funds will be provided by GOI.
- **Legislative measures:** The strict implementation of civic bye-laws and building bye-laws by the enforcement agencies would be taken up to prevent the development of mosquitogenic potential in urban areas. Health impact assessment of the project needs to be undertaken before start of the project.
- **Involvement of NGO/Private Sector/Community/Local Self Government:** The main thrust would be to mainstream anti malarial activities in the existing on going programme of the various departments, particularly in training, IEC and early diagnosis and treatment of malaria cases. Representatives from department of Women & Child, Rural Development, Panchayat Raj, Education, Industry, NGOs, professional bodies like Indian Medical Association, Indian Homeopathic/ Ayurvedic/ Siddha associations and Village level non-health functionaries like Anganwadi workers, workers from other ministries would be involved in early detection and treatment of malaria, promotion of ITNs and biological and environmental control of mosquito. Commodities to the tune of 10% of total EVBDCP outlay would be spent through NGOs.
- **Quality Assurance on Laboratory Diagnosis:** Microscopy and newer rapid diagnostic are being used across the country for diagnosis of malaria. Irrespective of the technique employed; establishment and maintenance of a



reliable diagnostic service depends on operational feasibility of the test, availability of adequate trained personnel, equipment and laboratory management systems at all levels. The lack of Quality Assurance (QA) and adequate monitoring of laboratory services at the peripheral level has been perceived as one of the important links missing in the anti-malaria programme. Therefore, it is essential to build and incorporate a quality assurance program into the national anti-malaria programme.

- **Behaviour Change Communication:** Community based approach and strategies will be developed to facilitate change in behaviour and life style of people related to prevention and control of malaria.
- **Long Lasting Insecticide Treated Nets:** Presently plain bed nets are being supplied from the centre and these bed nets are to be treated with insecticide twice in a year to increase the effectiveness of bed nets. This is a labor intensive and operationally challenging task, therefore, during the XI plan, long lasting insecticide treated nets (LLINs) having efficacy of 3-5 years would be introduced after successful field trials.

## **2.6 Modalities to improve efficiency and quality of services at primary, secondary and tertiary levels.**

### **Primary level**

- FTDs and DDCs would be trained in the use of RDKs for improving the diagnosis in remote and inaccessible areas.
- ASHA under NRHM, Anganwadi Workers of ICDS and Community Volunteers of NGOs would also be trained to serve as FTDs.
- The diagnostic capability of PHC in endemic areas would be improved by ensuring backup laboratory services in the entire sector PHCs. All the PHCs and CHCs would be equipped to provide *in patient* facility for management of Pf malaria cases.
- Laboratory surveillance from private sector would be enhanced by coordination with private practitioner and private laboratories.

### **Secondary level**

- Training of Medical Officers, Lab. Technicians and Community Volunteers of public and private sector would be taken up to strengthen the quality of services at secondary level.
- District level hospitals would be equipped with ventilators and appropriate laboratory services to manage the severe and complicated malaria cases.
- The medical audit of deaths would be taken up for all the deaths due to malaria so that corrective action for appropriate management would be built in the system itself and it would serve as a public health tool also to measure the effectiveness of the programme.



### **Tertiary level:**

- The Medical College hospitals will manage all referral cases.
- The state health authorities will coordinate with Medical Colleges for malaria control activities.
- Medical Colleges will undertake operational research on use of effectiveness of rapid diagnostic kits, efficacy of combi pack and therapeutic efficacy studies etc.
- Medical Colleges should have facilities for renal diagnosis for management of severe malaria cases.

### **2.7 M&E system including status of MIS**

- The sentinel sites for capturing data on severe and complicated malaria and the drug resistance would be activated through the web based NAMMIS. The efforts would be made for integrating the NAMMIS with the proposed web based Integrated Disease Surveillance Project. The data based management system of IDSP in states would be utilized for malaria disease surveillance. Dedicated staff for maintenance of the system and liaison with NIC would be developed.
- Field reviews / visits: For proper monitoring and supervision, regular field visits by the personnel from state/district level & ICMR institutes and ROH&FW is utmost important and NVBDCP will review periodically. ROH&FW and NIMR field units would be strengthened to upscale their skill and visit in field for supervision & monitoring of the programme implementation

### **2.8 Sustainability**

- Sustainability of the gains achieved would be ensured by enhancing the state ownership of the programme. The MPW (M) for enhancing surveillance would be sustained by the state sources. The assistance from private sectors to own up the responsibility of surveillance of their own work force will be taken up. The lack of manpower would be overcome by involving ASHA from the NRHM funds.

### **Collaboration with NIMR and Medical Colleges**

- NVBDCP will collaborate with ICMR institutions viz. NIMR and Medical Colleges of the states for efficient monitoring, supervision, training, drug policy and research in prevention and control of malaria. The NIMR should be strengthened and act as technical resource centre for all the activities. For this purpose, NIMR may hire the services of epidemiologist, entomologist, research officers and workers etc. for which NVBDCP would provide support to the institution.

## 2.9 Estimated budget for malaria

- Though the overall budget for National Vector Borne Disease Control Programme is compiled on the basis of the activities proposed in XI plan, the component wise estimated budget exclusively for malaria is indicated below:

### Estimated budget for malaria year-wise (Figure in Rs. in Crores)

	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Drugs	39.65	41.84	44.16	46.59	49.19	221.43
Diagnostics	15.27	16.49	17.81	19.23	20.77	89.58
IRS	98.39	92.82	96.73	101.09	105.66	494.7
Bednet	56.48	59.3	62.27	65.38	68.65	312.09
Vehicles	12.5	0	0	0	6.25	18.75
Training (Malaria)	5.5	5.5	5.5	5.5	5.5	27.5
BCC Malaria	15	15	15	15	15	75
Grant in Aid						
Mal	48	48	48	48	48	240
NE States	15	15	15	15	15	75
Establishment	10	10	10	10	10	50
Operational Research	0.5	0.5	0.5	0.5	0.5	2.5
Quality Assurance	2.86	2	2	2	2	10.86
Total	319.15	306.46	316.97	328.3	346.52	1617.4

## 2.10 Urban Malaria Scheme (UMS)

- In view of the disease trend and increasing risk of malaria, Urban Malaria Scheme has to be implemented with more emphasis with the following objectives too reduce morbidity due to malaria and mortality in 101.1 million project population by 50% by the year 2010 and sustain the level of reduction of the disease.
- Increasing the access to diagnosis and treatment in proposed 131 towns with particular focus on slum dwellers. Construction sites, industrial estate and market areas with floating population. Majority of the population at these sites constitute poor and marginalized families living below poverty line.
- Presently disease surveillance in urban situations is done through passive agencies i.e. at dispensary, hospital levels through reporting of patients while large proportion of patients get treatments from private sectors including quacks. These are not reported and recorded in the reporting system and as such the disease burden remains under estimated. Due to poverty and socio cultural constraints, many cases do not even seek health care.



- Social mobilization and partnership building are important to create awareness in the control of the disease and behaviour change interventions. Partnership networking and collaboration with Municipal Corporations or local bodies will be required in the programme.

**Estimated activity budget year-wise (Figure in Rs. in Crores )**

S. No.	Name of the items	2007-08	2008-09	2009-10	2010-11	2011-12	Total
1.	Py.Extract	2.82	2.88	2.94	3.00	3.06	14.70
2.	Polluted water larvicides	13.21	13.46	13.73	14.01	14.29	68.70
3.	Clean water larvicides	3.68	3.75	3.83	3.90	3.98	19.14
<b>Grand Total</b>		<b>19.71</b>	<b>20.09</b>	<b>20.50</b>	<b>20.91</b>	<b>21.33</b>	<b>102.54</b>

### **3 ELIMINATION OF LYMPHATIC FILARIASIS**

#### **3.1 Key Lessons Learnt**

- During the Mass Drug Administration with annual single dose of DEC tablets, though massive efforts were made for social mobilization for people living at the risk of filariasis to accept and consume the drug and reported coverage is about 80%, there are variation in actual compliance and reported coverage. It has been observed that the drug distributor is unable to cover 250 persons/50 houses in one day. This is mainly because in MDA campaign, the drug is given to all living in filaria endemic areas who apparently look healthy and need to be convinced. This involves time. Moreover, there is a fear of side effects of DEC. To avoid rumours and disinformation, prompt response and intensive BCC campaign is required to explain about need to consume the DEC for ELF and possible side effects due to DEC which is self limiting. The quality of DEC tablets also needs to be assured.
- Training to the health personnel at different levels for mass drug administration of DEC including drug distributors, medical officers, paramedical staff, etc need to be streamlined
- Hydrocele operations in identified district hospitals/CHCs are to be intensified to provide relief to the patients suffering from hydrocele.
- Providing training on morbidity management to patients suffering from lymphoedema at their doorstep so that they can get some relief from the acute attacks.
- Involvement of medical professionals from all sectors including private medical practitioners, elected representatives and civil society organizations in the

programme need to be strengthened. The media sensitization at local level is of utmost importance which needs to be geared up through advocacy workshops and repeated meetings.

- Development of software for computerized MIS for regular & prompt reporting and feedback.

### **3.2 Objectives**

**During XI plan period, the objectives of ELF will remain:**

- To progressively reduce and ultimately interrupt the transmission of lymphatic filariasis
- To prevent and reduce disability in affected persons through disability alleviation and appropriate management

### **3.3 Targets, Indicators and Means of verification**

To achieve the above objectives, the targets will be:

- To cover all eligible population living in 243 filaria endemic districts during MDA
- To line list the cases of lymphoedema in all the districts and augment home based morbidity management and hydrocele operations in identified district hospitals/CHCs

**The indicator will be:**

- % of target population actually consumed Drug
- Microfilaria rate in sentinel sites of the districts
- Number Hospitals/ CHCs equipped for hydrocelectomy
- Number of Hydrocele operations conducted out of total enlisted
- No. of complications after hydrocelectomy to assess quality of services per 1000 operations
- % of Lymphodema cases practising Home based management

**Means of Verification:**

- **Coverage and Compliance** will be verified by independent assessment by involving medical colleges and research institutions through questionnaire. In rural areas, three clusters each having 30 households (about 150 inhabitants ) and one cluster of 30 households in urban area in each district will be surveyed. Thus, a total of 120 households having about 600 inmates would be covered through interrogation including physical verification of tablets using a pre-designed and pre tested proforma
- **Microfilaria Survey :** The minimum number of slides to be collected need to be ensured and selection of sentinel and spot-check sites will be done under the guidance of medical college faculty and District incharge for prevention and



control of vector borne diseases. The time of night blood survey i.e between 8.30 pm and 11.30 pm will be cross-checked by concurrent and consecutive visits. In the consecutive visits the community will be interrogated about the time of survey. All the microfilaria positive blood smears and 10 % of the negative blood smears will be cross-checked.

- **Side Reactions due to DEC** : Serious Adverse Experiences of DEC, if any, are monitored and immediately attended by Mobile teams ( Rapid Response Teams).

### 3.4 Strategy

The strategy for elimination of lymphatic filariasis will continue as below:

- Annual Mass Drug Administration (MDA) of single dose of DEC (Diethylcarbamazine citrate) for 5 years or more to the eligible population (except pregnant women, children below 2 years of age and seriously ill persons) to interrupt transmission of the disease. *(Co administration of DEC+Albendazole will be subject to approval of National Task Force on Lymphatic Filariasis)*
- Home based management of lymphoedema cases and up-scaling of hydrocele operations in identified CHCs/ Distt hospitals /medical colleges.
- Capacity building for home-based management of cases with Lymphodema.

### 3.5 Initiatives Proposed:

#### 3.5.1 Priority areas for basic, clinical, applied and operational research

- Medical college faculties and institutions would be involved for field operational research for improvement in drug compliance, impact of home based morbidity management in improving quality of life and socio-economic conditions.

#### 3.5.2 Mechanisms of involvement of NGO/Private sector/ community/local self government in implementation and monitoring programme

The BCC campaign will be implemented through four-pronged activities: advocacy workshops, inter-sectoral meetings, programme communication and monitoring and evaluation at all levels (national/state/district/urban areas/blocks/sub-centres/villages) with the objectives of:

- Enhancing awareness on lymphatic filariasis and its elimination aspects,
- Promoting attitudinal and value changes among target audiences leading to informed decisions, modified behaviour, desirable practices regarding drug consumption and home based morbidity management,
- Building support for the programme across inter-sectoral partner organizations, influential sectors of society and health care service providers (public/private) and eliciting commitment for action,



- Stimulating increased and sustained demand for quality prevention and care services,
- Ensuring availability of services

NGO/Private sector/ community/ local self government will be involved in the programme by building their capacity on various aspects of ELF programme eg. local monitoring of distribution of drug, mopping up operations for improvement in coverage and compliance. This would be achieved through intensive social mobilization and BCC campaign.

Non-Governmental Organizations (NGOs), Community Based Organisations (CBOs), Faith Based Organisations (FBOs) can play an important role in LF elimination. These organisations should be invited to discussions when the annual strategic plan is prepared, so that they can identify areas of interest for their participation, which could be incorporated in the national plan. A list of NGOs, CBOs, FBOs and Panchayats with the possible areas of partnership should be prepared. It would be advisable to include social sector department such as educations, youth affairs, social welfare, rural development, *Panchayat*, Municipal Corporation, information and broadcasting etc. in the DCC. Representation from professional organisations association like SMA, CII, IMA, FICCI, ASSOCHAM, etc. are also co-opted as members besides NGOs

**The possible areas of partnership** for an active role of voluntary organisations for Elimination of Lymphatic Filariasis (ELF) in India are identified in the following four specific areas:

- Mapping of areas through morbidity surveys,
- Social Mobilization for drug compliance,
- Supporting mass drug administration and management of adverse reactions.
- Morbidity Management at community level.

### **3.6 Modalities to improve efficiency and quality of services at primary, secondary and tertiary levels**

The Directorate of NVBDCP has initiated three tier capacity building at primary, secondary & tertiary levels. Guidelines on Integrated Training on Vector Borne Disease Control Programme have been circulated to all States/UTs and other stakeholders. Integrated Trainers' Training of the Medical College Faculty on vector borne diseases, including filariasis at tertiary level has started to strengthen health care delivery system; ensure the quality of health manpower development. Similar endeavours have been commenced at secondary and primary levels for capacity building of medical and paramedical personnel and community volunteers. The capacity building will continue as integral part of ongoing activity under the programme. Besides, specific and focused training will be imparted during MDA campaign to involve more number of medical and paramedical personnel as well as persons from non-medical sectors.



### 3.7 M&E system including status of MIS, Disease surveillance, its quality and utilization

Monitoring & Evaluation of ELF programme covers process monitoring viz., assessment of timely implementation of activities as per calendar, assessment of coverage of drug distribution during MDA and compliance of drug (actual drug consumption) for enhancing the drug compliance and assessment of activities for Behaviour Change Communication.

- **Formats for Data Capture:** Planning and implementation of any disease control programme depend on information support. Information is derived from data and hence the quality of information depends on how the data are collected and the nature of the "instrument" employed in the collection procedure. Therefore, formats for data capturing have been circulated to the filaria endemic states/UTs so as to collect the data in a uniform pattern.
- **Compliance:** The issues of coverage of distribution and consumption are ideally recorded as primary data at the time of drug administration, in which case, sampling design is not required. Since consolidation of compliance data based on drug providers' records may not be authentic, a sample survey is carried out subsequently by involving medical college faculties to assess and validate the data. These surveys also include components relating to compliance (adverse reaction) and efficacy of IEC tools employed. Questionnaire surveys are carried out within a limited period of time from the date of MDA considering the memory of individual respondents, which will influence the quality of data. The sampling units are individuals who are interviewed from selected households in the identified villages in rural areas and similar households from selected wards in towns and municipal areas.
- **Impact evaluation:** Efficacy evaluation is based on the parasitological surveys in human population before and after the intervention covering certain proportion of population in selected villages / wards. Distribution of filariasis is known to be clustered and therefore selection of villages for impact assessment is done by taking representative samples from different clusters (such as low, medium and high) within a given district. Eight sites (fixed and random) are selected for each district and a minimum of 4000 persons (500 per site) are examined for microfilaria. The detailed guidelines have been provided to states/UTs.
- The HMIS programme for filariasis is under process of development. With the operationalization of HMIS for filariasis, the reports on ELF activities will be received at the Directorate without much lapse of time.

### 3.8 Sustainability

In order to achieve the National Health Policy goal of ELF by the year 2015, adequate funds/resources need to be provided to endemic states/UTs to sustain the ELF programme. As a policy, the budget head for ELF is to be separated



within the overall NVBDCP outlay. As on date, there are budget heads for Malaria, Kala-azar and EAC.

### 3.9 Overlapping/ Duplication within or across Health Programmes; convergence issues

The programme is already integrated within umbrella of NVBDCP. The strategy of ELF includes partnership with other National Health Programmes, non-health sector departments, civil society organizations (Non-Governmental Organizations/Faith Based Organizations/ Community Based Organizations/ Panchayati Raj Institutions/Self-Help Groups), corporate sector, medical academia, professional bodies. Once all the partners are fully aware about the programme, its strategy and monitoring and evaluation, there may not be any chance of overlapping or duplication in the field of either implementation or data capture.

### 3.10 Estimated Budget (Activity and Year wise)

All these activities require advocacy, sensitization, training of various personnel at various levels besides monitoring and evaluation which require mobility and in turn require the resources. To carry out all the preparatory activities in time, the following roadmap has been circulated to all the states and the requirement of fund works out around Rs. 93 crores including the cost of DEC tablets and may progressively increase to about Rs. 100 crores.

#### Roadmap for MDA 2006

Training of Trainers	June	150 days prior to MDA
State Task Force Meeting	Aug.	90 days prior to MDA)
State TAC Meeting	Aug.	-do-
First DCC Meeting	Aug.	-do-
Dissemination of information to all Districts	Aug.	75 days prior to MDA
District Advocacy workshop	Sep.	60 days prior to MDA
First Press Meet/Media Flash	Sep.	-do-
District training of MOs	Sep.	45 days prior to MDA
BCC activities	Sep.	-do-
Village/Ward level micro plan	Oct.	30 days prior to MDA



Supply of drugs to PHC	Oct.	-do-
Training of paramedics	Oct.	-do-
Review of micro plan at district	Oct.	15 days prior to MDA
Second DCC meeting and media flash	Oct.	-do-
Workshop for private medical practitioners	Oct.	-do-
Baseline data collection	Oct.	-do-
Identification of drug distributors	Oct.	-do-
Training to drug distributors	Nov.	7 days prior to MDA
Supply of DEC to Subcentres	Nov.	-do-
Mass Drug Administration	Nov.	11 November 2006
Mop up operation	Nov.	12-13 November 2006
Assessment actual drug compliance	Nov.	Within 20 days of MDA
Submission of reports by the States/UTs	Dec.	Within 1 month of MDA

Estimated Budget for ELF (Activity and Year-wise)						
Activity	(Rs. in crore)					
	2006-07	2007-08	2008-09	2009-10	2010-11	Total
Meetings National level, State level, DCC	0.93	0.93	0.93	0.93	0.93	4.63
BCC/Advocacy/ IEC at centre, state, district/ PHC/ Sub centre	34.25	34.25	34.25	34.25	34.25	171.24
Training District officers, PHC-MOs, Paramedical staff, Drug Distributors	13.73	13.73	13.73	13.73	13.73	68.65
Others	0	0	0	0	0	0
DEC	8	8	8	8	8	40
Operational cost for mapping & morbidity management	4.01	4.01	4.01	4.01	4.01	20.05

Baseline data collection	1.33	1.33	1.33	1.33	1.33	6.66
Honorarium to volunteers	21.9	21.9	21.9	21.9	21.9	109.52
Honorarium to supervisory staff	2.74	2.74	2.74	2.74	2.74	13.69
Contingency expenses for social mobilisation & advocacy	4.86	4.86	4.86	4.86	4.86	24.3
POL	1.94	1.94	1.94	1.94	1.94	9.72
Monitoring & Evaluation	0.2	0.2	0.2	0.2	0.2	1
<b>Total</b>	<b>93.89</b>	<b>93.89</b>	<b>93.89</b>	<b>93.89</b>	<b>93.89</b>	<b>469.45</b>

#### **Abstract of above activity in broad headings (Rs. in crore)**

	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Drugs	8	8	8	8	8	40
Training	13.73	13.73	13.73	13.73	13.73	68.65
BCC	34.25	34.25	34.25	34.25	34.25	171.25
Grant in Aid & HQ	37.91	37.91	37.91	37.91	37.91	189.55
<b>Total</b>	<b>93.89</b>	<b>93.89</b>	<b>93.89</b>	<b>93.89</b>	<b>93.89</b>	<b>469.45</b>

## **4. KALA-AZAR ELIMINATION PROGRAMME**

### **4.1 Key Lessons learnt from the X Five Year Plan**

- Poor programme implementation at grassroots level.
- Ongoing efforts are not sustained and the kala-azar incidence is showing increasing trend.
- Either no indoor insecticidal spray or of very poor quality for vector control.
- Due to prolonged injection based treatment, some of the cases did not complete the full treatment.
- Moreover, there remained some untraced or untreated cases which act as parasitic reservoir.
- Inadequate surveillance of Post Kala-azar Dermal Leishmaniasis (PKDL) cases which also act as active source of Kala-azar transmission.
- Inadequate monitoring & supervision.

### **4.2 Objectives:**

- Elimination of Kala-azar from the country by 2010



### 4.3 Target

- To reduce the annual incidence of Kala-azar to less than one per 10,000 population at the sub-district level by 2010.

#### Indicators:

- No. of Kala Azar Cases per 10000 Population in endemic areas
- Kala Azar Case fatality Rate

### 4.4 Strategy:

The strategies for Kala-azar elimination will be:

- **Parasite elimination and disease management**
  - Early case detection and complete treatment,
  - strengthening of referral;
- **Integrated vector control**
  - Indoor Residual Spraying (IRS),
  - environmental management by maintenance of sanitation and hygiene,
  - promotion of use of Insecticide Treated Bed Nets (ITNs);
- **Supportive interventions**
  - Behaviour Change Communication for social mobilization,
  - Inter-sectoral convergence;
  - Capacity building by training and Monitoring and Evaluation.

### 4.5 Initiatives

In accordance with goals of National Health Policy (NHP) document of 2002 which envisages elimination of Kala-azar by the year 2010, following initiatives would be undertaken:

- To improve treatment compliance a new oral drug Miltefosine would be introduced as the first line of treatment.
- Initially the drug Miltefosine would be introduced in 11 pilot districts of Bihar, West Bengal and Jharkhand. Basing on the experience gained in operationalizing the use of this drug it would be introduced in the other endemic districts of the country as the first line of treatment.
- The treatment with Miltefosine would be taken up on the DOTS pattern as a supervised treatment with patient coding system being followed for each patient registered at the treatment centre. **Patient coding scheme** will

facilitate the tracking of all patients of kala-azar down to the village and individual household level with greatly improved default retrieval. The use of Treatment Cards and Master Kala-azar Patient Register will be ensured in case of each and every treatment centre.

- To allow a rapid and easy diagnosis of Kala-azar rK39 rapid diagnostic test kits will be introduced in the programme. To begin with these rapid diagnostic test strips will be piloted in 11 districts alongwith oral drug Miltefosine.
- The use of Miltefosine and rK39 rapid diagnostic test kits are expected to greatly improve case detection particularly the passive case detection. However, initiatives will be taken to improve **active case detection** by increasing the frequency of door to door visit by observing the **Kala-azar fortnight** every quarter i.e four times in a year. Volunteers would be drawn from organizations like Nehru Yuva Kendra, NCC etc. to intensify the case searches including the PKDL cases. These volunteers would be provided necessary orientation.
- Monitoring of diagnosis and treatment will be accelerated by frequent visits by programme personnel as well as by proposed coordinators.

### **Vector Management**

- Indoor residual spraying for interruption of transmission will be taken up in all the 52 endemic districts of the country instead of focal spraying which was done in the past.
- Monitoring of the process and impact of indoor residual spraying would be stepped out through independent studies on the effect of spraying on vector populations and susceptibility studies.
- Environment sanitation will be given considerable importance in a BCC campaign to eliminate the breeding sites of the vector species.
- Initiatives are underway for the provision of alternative housing sites to the poor and marginalized population in the Kala-azar villages, who are the most common victims of disease, under the Indira Vikas Yojna.
- Necessary modules will also be developed for capacity building at various levels to strengthen skills for programme implementation.

### **Mechanisms of involvement of NGO/Private sector/ community/local self government in implementation and monitoring programme**

- Networking with NGOs and Private Sector will be taken up more thoroughly during the plan period.
- Reporting formats will be communicated to all the major private practitioners and NGOs who are treating Kala-azar cases.
- Linkages will also be established with all the NGOs and Faith Based Organisations.
- The media plans and media kits will be developed for vigorous BCC campaigns to involve community in treatment and vector control.



## **Priority areas for basic, clinical, applied and operational research**

The following areas are priority areas for applied and operational research.

- The operational use of Miltefosine as the first line of treatment.
- The operational use of rK39 as a rapid diagnostic kit.
- The use of alternative methods of rapid diagnosis.
- The operational research on the treatment of PKDL.
- The development of guidelines on the treatment of PKDL.
- Intensive studies on the impact of insecticide spraying and susceptibility of Kala-azar vectors.

### **4.6 Modalities to improve efficiency & quality of services**

**Effective strategy implementation through:**

- Strengthened passive surveillance
- Intensification of Active case detection through Kala-azar fortnight.
- Declaring Kala-azar a notifiable disease
- Standard treatment protocol compliance and follow up through treatment cards
- Effective DDT spray under close supervision
- Effective IEC campaign to make programme broad based and initiate community empowerment and mobilization
- Efficient manpower development through trainings
- Networking with other health care service providers in public/private sector
- Linkages with other national health programmes like NLEP/NACP/RNTCP etc. for case search & IEC.
- In addition to the above, the Coordinator will be engaged at the rate of one Coordinator per district for all the 52 Kala-azar endemic districts on contractual basis.
- This provision has been made for mobility support of these district coordinators for supervision and monitoring of the programme.

### **4.7 M & E system including status of MIS, Disease surveillance, its quality & utilization**

- Data on number of cases & deaths received.
- State/districts asked to provide age & gender wise information up to sub-centre wise.
- For line listing of kala-azar cases, new coding scheme is being introduced to avoid duplication and overlapping.
- Proper monitoring & analysis of data at sub-centre/PHC/district level envisaged.
- Ensure regular monitoring & reporting of spray completion reports.

#### 4.8 Programme Sustainability depends upon :

- Priority to the Kala-azar problem at all levels of programme implementation.
- Strengthening of infrastructure.
- Required funds in place in time.
- Availability of drugs, insecticides, equipment, vehicles, etc.
- Ensure timely and effective spray coverage.
- Regular monitoring and evaluation

#### 4.9 Overlapping/duplication within or across health programme; convergence issues

- Presence of different institutes for same cause i.e. ICMR, NICD, Medical College, RD office.
- There is no coordination among these on their functioning on kala-azar or implementation.
- Functioning of state health directorate and state health society (NHRM).
- Functioning of MPHW, ANM, ASHA & Anganwadi Worker, NGOs.
- Functioning of private & public practitioners.

#### 4.10 Proposed Estimated Budgetary Outlay for Vector Borne Disease Control Programme (Kala-azar) for XI Five Year Plan:

The activity-wise and year-wise break up of proposed funds for elimination of kala-azar is indicated below:

**Estimated Budgetary Outlay for Kala-azar for XI Five Year Plan (Rs. in crores)**

Component	Quantity	Rate per unit (LPP)	2007-08	2008-09	2009-10	2010-11	2011-12	Total Amount
IRS DDT	3500 MTs	Rs. 93000/-	32.55	32.55	32.55	32.55	32.55	162.75
SSG Injection	124000 vials for 24800 cases	169.60/- per vial	2.1	2.1	1.05	0.53	0.53	6.3
Amphotericin-B	31000 inj for 6200 cases	118.91/- per inj.	0.37	0.37	0.18	0.09	0.09	1.1
Miltefosine	1064000 Capsule for 19000 cases	40.17/- per capsule	4.27	4.27	2.14	1.07	1.07	12.82
RK39	154240 tests	225/- per test	0.35	0.35	0.17	0.09	0.09	1.04



Diagnosis/strengthening of lab./treatment facilities	520 PHCs (10 PHC per distt)@ 10000 per PHC	Rs. 10,000 per PHC	0.52	0.52	0.52	0.52	0.52	2.6
Case search	Twice each year 5 lakh per district 52 X 10 = 520 PHCs	Rs. 5000 per PHC	2.6	2.6	2.6	2.6	2.6	13
Stirrup pumps & accessories	129 X 55 X 2 = 14190 stirrup pump	Rs. 1500 per pump	2.13	2.13	-	-	-	4.26
Operational cost towards wages	65 X 52 = 3380 Squads X Rs.366 per day X 108 days	Rs 70/- per FW Rs. 86 per SFW	13.36	13.36	13.36	13.36	13.36	66.8
POL/Mobility/supervision	52 districts	Rs. 7.5 lakh per district	3.9	3.9	3.9	3.9	3.9	19.5
Capacity Building	52 districts	Rs. 3 lakhs per district	1.56	1.56	1.56	1.56	1.56	7.8
IEC /BCC/ Advocacy	52 districts	Rs.2.5 lakh per district	1.3	1.3	1.3	1.3	1.3	6.5
Evaluation			0.25	0.25	0.25	0.25	0.25	1.25
Total			65.26	65.26	59.58	57.81	57.81	305.72

## 5. DENGUE

### 5.1 Key Lessons Learnt from X Five year Plan

- Poor vector monitoring and surveillance.
- Poor sero-surveillance at sentinel sites (hospital level)
- Absence of any vaccine.
- Vector establishing very fast from urban to rural areas.
- Changing biology of the vector species i.e *Aedes aegypti* by shifting from urban to rural situation.
- Lack of infra-structure separately for the dengue control activities.
- Non-cooperation of community in vector control measures.

- Changes in the environmental conditions making suitable for the vector & virus propagation.
- Implementation of civic bye-laws.

## 5.2 Objectives

- To prevent mortality due to dengue/DHF.
- To reduce morbidity due to dengue/DHF.

## 5.3 Target:

- To reduce morbidity & mortality due to DHF

## Indicators

Case fatality rate associated with dengue/DHF.

- Frequency of outbreaks

## 5.4 Strategies:

The basic components of dengue control strategy for dengue fever/DHF are:

- Effective disease & vector surveillance.
- Selective & stratified integrated vector control through community participation & inter-sectoral coordination.
- Emergency preparedness & response.
- Clinical diagnosis & prompt management.
- Capacity building / Training.
- Operational research on vector control, laboratory diagnosis & case management.

## 5.5 Initiatives

The following initiatives would be undertaken in the affected areas.

- Strengthening of sero-surveillance activities at regular intervals.
- Monitoring of vector population in vulnerable areas.
- Capacity building for the medical officers for case management.
- Adequate supply of diagnostic kits at the periphery.
- Strengthening of laboratory services at district hospitals.
- Implementation of civic by-laws.
- Intensive social mobilization campaigns through Behavioural communication changes for community involvement at individual level.



## **Priority areas for basic, clinical, applied and operational research**

- Role of different *Aedes* species in dengue transmission and its bionomics.
- The role of different types of containers in different areas for vector breeding preference.
- Development of epidemiological & entomological indicators for early warning signals.
- The operational use of diagnostic kits at the field level.
- Base line studies for BCC strategies for its impact in terms of vector and disease.

## **Mechanisms of involvement of NGO/Private sector/ community/local self government in implementation and monitoring programme**

- Networking with NGOs & Private sector.
- Sensitization of private doctors through IMA.
- Development of media action plans for its timely implementation at all levels.
- Networking with different sectors for their active and time frame involvement.
- Implementation of civic bye-laws.

## **5.6 Modalities to improve efficiency & quality of services**

Effective strategy implementation through:

- Strengthened referral services.
- Intensification of vector surveillance at sentinel sites.
- Declaring dengue a notifiable disease.
- Standard treatment protocol for case management.
- Develop epidemic preparedness & response teams at district level.
- Intensification of BCC interventions at grassroot level.
- Effective IEC campaign to make programme broad based and initiate community empowerment and mobilization
- Efficient manpower development through trainings
- Networking with other health care service providers in public/private sector

## **5.7 M & E system including status of MIS, Disease surveillance, its quality & utilization**

- Ensure timely data on number of cases & deaths received.
- Request to state/districts to provide age & gender wise information.
- Develop state/district action plan for timely action plan.
- Ensure vector & disease surveillance at sentinel sites.

## **5.8 Programme Sustainability depends upon**

- Priority to dengue problem at all levels of programme implementation.

- Strengthening of infra-structure.
- Required funds in place in time.
- Availability of referral services, insecticides, equipments, vehicles etc.
- Ensure timely and effective control measures.
- Regular monitoring and evaluation.

#### 5.9 Overlapping/duplication within or across health programme; convergence issues

- Working of different institutes for same cause i.e. ICMR, NICD, NIMR, MCD, NDMC, Medical College, Railways, Defense etc.
- All agencies i.e. Govt. or private need to follow common protocol for case management & vector control
- There is no coordination among different agencies on their functioning on dengue control.
- Functioning of private & public practitioners in isolated manner.
- Functioning of IDSP to get same information as envisaged by NVBDCP resulting in duplication.

#### 5.10 Estimated Budget (Activity & year wise) :

##### Estimated Budget For Dengue/DHF For XI Five Year plan

Rs. in Crores								
Sl. No.	Component	Qty. & Cost	2007-08	2008-09	2009-10	2010-11	2011-12	Total
1	Fogging Machine	200 Nos X Rs. 50,000	1.00	1.00	-	-	-	2.00
2	Diagnostic Kits	600 Nos. X Rs. 15,000	0.90	0.90	0.90	0.90	0.90	4.50
3	Elisa Reader	44 Nos. X Rs. 250000	1.10	-	-	-	-	1.10
4	IEC	Rs.1 lakh per distt for 130 districts	1.30	1.30	1.30	1.30	1.30	6.50
5	Training	Rs. 1.30 per distt. for 130 districts	1.69	1.69	1.69	1.69	1.69	8.45
6	Insecticide	20 MT X 1.10 lakh	0.22	0.22	0.22	0.22	0.22	1.10
<b>Grand Total</b>			<b>6.21</b>	<b>5.11</b>	<b>4.11</b>	<b>4.11</b>	<b>4.11</b>	<b>23.65</b>



## **6. JAPANESE ENCEPHALITIS**

### **6.1 Key Lessons learnt from X Five year Plan**

- Actual disease burden is not known. Surveillance will be strengthened in all JE endemic districts.
- Strengthening of Diagnostic facilities and treatment centres at the peripheral level.
- Till 2005, only inactivated vaccine with limited indigenous production was available in the country which requires repetitive boosters after initial 3 doses, after every 3 years. Govt. of India has launched a JE vaccination programme integrated with Universal Immunization Programme (UIP). In this programme, live attenuated SA-14-14-2 JE vaccine in single dose will be used. The programme has already covered children between 1 and 15 years of age in 11 districts of 4 states (Uttar Pradesh, Karnataka, West Bengal and Assam) and it is propose to extend in a phased manner.
- Limited involvement of private practitioners as regards case reporting and management of JE cases
- Weak infrastructure for entomological investigations and forecasting of potential epidemic outbreak

### **6.2 Objectives**

- Reduction in mortality by 50% by the year 2010 (as per NHP- 2002)
- To reduce frequency of outbreak

### **6.3 Targets for XI Plan**

- Vaccination of children (1-15 years) in JE endemic districts
- Institutional Strengthening for sentinel surveillance and diagnostic facilities
- Capacity building for Case Management in all 183 JE endemic districts (Based on last five years data).

### **Indicators**

- Children immunized ( Coverage % against target )
- % of Institutions/Sentinel surveillance Sites (SSS) having diagnostic facilities
- Number of Institutions/ hospitals in the district having facilities for case management
- No. of trained teams of clinicians/Nurses available in endemic districts
- % of institutions/hospitals practicing management of suspected JE cases

## Mean of verification

- Overall evaluation of impact of vaccination by an independent agency (ICMR) in selected sites. Serological study will be done to identify the viral strains in the suspected JE affected children in immunized areas.
- No. of functional SSS/ Laboratories for diagnosis of JE..

## 6.4 Strategies during XI plan

The strategy would include:

### 6.4.1 Early Diagnosis and Prompt treatment of JE cases

Early Diagnosis and Prompt treatment of JE case through existing healthcare infrastructure/ hospitals etc, helps in reducing case fatality rate and would increase the credibility of improved health system in the country, it includes:

- **Proper case management at PHC/CHC:** Prompt and effective case management would need more improved inputs and care from health care providers (medical and paramedical) and sufficient availability of drugs and equipment in treatment centres. Infrastructure of clinical Management with Standard Operating Procedure / guidelines for management of cases will be available at District/CHC/PHC level.
- **Strengthening of referral services:** Referral support will be made available by the state at PHC/CHC level to transport the complicated patients in to the referral hospitals.
- **Facility for diagnosis in all endemic districts:** Surveillance and sentinel laboratories for diagnosis of JE cases will be strengthened at peripheral level (in JE endemic districts) in a phase manner.
- **Management of Sequelae:** Sequelae management will be done by drugs, orthopedic and rehabilitation procedures in all District/Medical College Hospitals/specialist Hospitals in JE endemic areas.
- **Epidemic preparedness and rapid response:** A rapid response team will be constituted in all JE endemic districts to monitor the JE situation and outbreak in their areas.

### 6.4.2 Strengthening of JE surveillance

Surveillance will be strengthened to detect all Acute Encephalitis Syndrome (AES) cases and Laboratory confirmed JE cases. Private Practitioners will also to be involved to report JE cases as per guidelines. For effective disease surveillance, the data collection will be uniform and regular through standard proforma. For this national guidelines will be provided to states. Following components of the surveillance need to be strengthened:



#### **(a) Serological surveillance**

For effective serological surveillance, following activities will be carried out:

- Strengthening of laboratory for sero-diagnosis by providing JE kits/ELISA Reader.
- Collection of samples and analysis in serology laboratory.
- Training of Technicians/Microbiologist for MAC ELISA diagnosis of suspected cases

#### **(b) Entomological Surveillance**

- Identification and mapping of breeding sites of JE vectors will be done during transmission and non transmission season.
- Regular monitoring of vector density will be done in fixed sites.
- Screening/isolation of JE virus will be done from suspected JE vector mosquitoes and possible reservoirs.
- Entomological investigation will be carried out through trained manpower available in the district/state.

#### **6.4.3 Integrated vector control method**

- The main tool is vector control by fogging with malathion/pyrethrum for immediate killing of mosquitoes during an outbreak and anti-larval operations wherever feasible.
- Promoting personal protection method by using insecticides treated bed nets and curtains, wearing full sleeve clothes during evening hours etc.
- Biological control using larvivorous fishes wherever available.

#### **6.4.4 Capacity building**

Capacity building & manpower development through training for Clinicians/Nurses in JE case management in all JE endemic districts and for Laboratory Technicians and Laboratory In -charge/microbiologist in diagnosis of JE cases by MAC ELISA method in all sentinel laboratories in a phase manner. Integrated training on vector borne diseases including JE will be conducted.

#### **6.4.5 Behaviour change communication (BCC)**

Emphasis will be given on:

- Increasing awareness of clinical signs
- Personal protection including segregation of pigs away from human population/mosquito proofing of pigsties etc.
- Early reporting of cases
- Education about environmental sanitation

Activities for prevention of JE will be included as integral part of BCC on vector borne diseases control.

## **Vaccination**

Vaccination in high risk areas and high risk population where ever feasible. Live attenuated JE vaccine has been imported during the year 2006 (X plan) and Govt. of India has launched a JE vaccination programme for children between 1 and 15 years of age in 11 districts of 4 states (Uttar Pradesh, Karnataka, West Bengal and Assam). JE vaccination programme has been made an integral component of Universal Immunization Programme in a phased manner using single dose live attenuated SA-14-14-2 vaccine. On the basis of availability of vaccine, plan for the other district is being developed by UIP along with the budget.

## **Supervision and monitoring**

Supervision and Monitoring would be done through periodic reviews/reports, field visits and Web based MIS for proper monitoring for Japanese Encephalitis.

Monitoring plan should be prepared by the state in order to ensure that activities envisaged by the states are implemented at the field level. Directorate of NVBDCP routinely monitors monthly incidence of JE and during epidemics, daily monitoring is carried out. Weekly monitoring will also be done during transmission season. Surveillance data will be collected from the states and will be analyzed to detect early warning signals (EWS) for JE outbreak. Sero-surveillance centers and vector surveillance centers existing in the state will provide the information regularly to the Directorate of NVBDCP through State Health authorities. The team of state, centre and ROH&FW should carry out supervision.

## **6.5 Initiatives**

### **6.5.1 Policy during X Plans -Convergence of ongoing programme for Vector Borne Diseases including JE**

Government of India has approved an Umbrella Programme for control of Vector borne Disease including Malaria, Kala-azar, Filariasis, Japanese Encephalitis (JE) and Dengue Fever/Dengue Hemorrhagic Fever since December 2003. Directorate of National Vector Borne disease Control Programme the nodal agency for Govt. of India responsible for the Control Programme of these diseases. For prevention and control of Japanese Encephalitis necessary technical assistance and need based assistance are being provided by NVBDCP for investigation and control of JE.



## Policy initiatives during XI Plan

As per the proposed strategies following initiatives would be taken:

- Emphasis would be on strengthening of surveillance, sentinel laboratories for diagnosis of JE cases and treatment facilities at peripheral level.
- Training of Clinicians/Medical Officers in management of JE Cases and availability of trained teams in each endemic district.
- Availability of necessary infrastructure for management of JE cases in CHCs and District Hospitals in endemic areas.
- Availability of trained staff for MAC ELISA diagnosis of JE cases in all sentinel sites along with ELISA Reader and JE kits.
- Involvement of Medical Colleges in JE control programme
- Early case reporting and referral of cases would be achieved.
- Constitution of trained team of Rapid Response Team in each endemic districts
- Analysis of epidemiological and entomological data for epidemic outbreak prediction and timely remedial measures at state and National level.

The programme activities will be implemented by the States/UTs through existing infrastructure available. Directorate of NVBDCP will be the national nodal agency for monitoring and providing technical assistance to the affected states/UTs. It is also proposed to provide one time non-recurring support to the states in terms of fogging machines, ELISA Reader and Ventilator.

**Policy issues for consideration during XI Plan:** Japanese Encephalitis to be "Notifiable Disease". At present vector borne diseases are not included under the Act for Notifiable Disease throughout the country. Some States have made initiative of declare these diseases Notifiable. E.g. Dengue/DHF is Notifiable in Delhi, Kala-azar in Bihar and Malaria, Japanese Encephalitis and Dengue/DHF in Karnataka. Making these vector borne diseases except filariasis. "Notifiable" throughout the country, will help programme to record every case that is diagnosed and treated even by the private sector which will facilitate effective planning and implementation of prevention and control measures.

**Research and Development** in vector borne diseases particularly on Japanese Encephalitis has been rather inadequate so far. There are major gaps in the present knowledge and available technology. Concerted efforts are required to be made for an effective Research and Development programme. Some of the critical areas related to JE control requiring operational research include:

- Operational Research on various JE control interventions and their implementation such as use of neem coated urea in the rice field, use of insecticides treated Bed Nets/curtains.
- Epidemic Preparedness and Response by developing early warning signals for prediction of JE outbreaks



- JE Vector bionomics for planning if intervention methods.- Bionomics of JE vectors including seasonal prevalence and estimation of vector density in indoor sites such as human dwelling/cattle sheds/mixed dwelling and outdoor situations such as bushes, plantations, standing crops, sugarcane fields in standard prescribed formats to be studied.
- Study the efficacy of JE in the vaccinated areas and overall evaluation of impact of vaccination by an independent agency.
- KAP study.

It is desirable that above mentioned activities would be continued on a regular basis and specific funds be earmarked for sponsored research coordinated by the programme directly for addressing key issues related to operational research. Nodal officer of NVBDCP will coordinate these activities.

#### **6.6 M & E system including status of MIS, disease surveillance, its quality and utilization**

Monitoring would be done through periodic reviews and monthly/weekly/daily reports and field visits etc.. Web based MIS is to be developed for proper monitoring for Japanese Encephalitis.

- Strengthening of JE surveillance as per the national guidelines to be issued by NVBDCP. Surveillance of AES needs to be adopted.
- Overall evaluation of impact of vaccination by an independent agency.

#### **6.7 Sustainability**

There should be a separate budget head for prevention and control of JE in India. As JE is an outbreak prone disease and mortality due to JE is very high as compared to other diseases under NVBDCP.

#### **6.8 Overlapping/Duplication**

As NVBDCP is a nodal agency for prevention and control of JE in country therefore data monitoring is being done by Directorate of NVBDCP. If data will be captured by any other organization, it should be provided to the Directorate of NVBDCP to avoid any duplication or overlapping in feedback to states.

#### **6.9 Estimated Budget**

National Vector Borne Disease Control Programme will have the following pattern of funding:

- cost sharing between Centre and States
- One time non-recurring central assistance in terms of ELISA Reader, Ventilator, Fogging machines and other equipment etc.
- Drugs and Malathion technical (insecticides) to be provided by the centre during outbreak



- Fund for diagnostic kits, training and IEC to be provided by the centre on regular basis
- JE vaccination programme has been made an integral component of Universal Immunization Programme in a phased manner using single dose JE live attenuated SA-14-14-2 vaccine.
- Rehabilitation units funded by Central Government for the first 5 years may be established in Government Medical College / district and other hospitals

### Proposed budget for XI Five year plan for JE

(Rs. in crore)

Component	Rate per Unit (Rs. In Lakhs)	2007-08		2008-09		2009-10		2010-11		2011-12		XI Plan 2007-12	
		Qty.	Cost	Qty.	Cost	Qty.	Cost	Qty.	Cost	Qty.	Cost	Qty.	Cost
Fogging Machine	Rs. 0.4/-	732	2.93	360	1.44	0	0	0	0	0	0	1092	4.36
Physiotherapy equipments #	Rs. 0.6/-	21	0.13	21	0.126	0	0	0	0	0	0	42	0.25
Ventilator	Rs. 6.0/-	70	4.20	80	4.8	0	0	0	0	0	0	150	9
Elisa Kits	Rs. 0.10/-	200	0.20	200	0.2	300	0.3	350	0.35	400	0.4	1450	1.45
IEC Material	1.00 per district (For Total 183 JE endemic districts)**		1.83	0	1.83	0	1.83	0	1.83	0	1.83	0	9.15
Training	0.7 per per JE endemic districts*		5.49	0	5.49	0	5.49	0	5.49	0	5.49	0	27.4
Technical malathion	1.6 per MT	30	0.48	30	0.48	30	0.48	30	0.48	30	0.48	150	2.4
Operational Research			0.15	0	0.15	0	0.15	0	0.15	0	0.15	0	0.75
Contingency HQ			0.20	0	0.2	0	0.2	0	0.2	0	0.2	0	1
<b>GRAND TOTAL</b>			<b>15.60</b>	<b>6.91</b>	<b>14.72</b>	<b>3.30</b>	<b>8.45</b>	<b>3.80</b>	<b>8.50</b>	<b>4.30</b>	<b>8.55</b>	<b>27.34</b>	<b>55.</b>

# Exercise equipment excluding heat therapy with electrical stimulation for JE affected disabled persons

\*JE endemic districts (183) on the basis of last 5 years data

## 7. CAPACITY BUILDING

### 7.1 Key lessons learnt

- Repeated outbreaks of the vector borne diseases in many parts of the country indicating failure to predict the early warning signal to take timely containment measure
- Increased trend of *P. falciparum* and drug resistance foci

- Difference between training targeted and achievements
- Participation of faculty from medical colleges in the trainings for secondary levels due pre-commitment towards teaching and treatment at medical colleges
- Requirement of need based special hands-on training for clinicians on management of severe and complicated cases of VBDs

## **7.2. Objectives**

The National Health Policy (2002) has clearly delineated the goals for vector borne diseases. However, the specific objectives for capacity building are:

- To enhance the skill of the medical officers of PHC/CHCs in management of severe and complicated vector borne diseases especially *Pf* malaria.
- To build up the capacity of the paramedical workers for analyses and interpretation of surveillance data (epidemiological & entomological) for prediction of epidemic/ outbreaks.
- To build up the capacity of the peripheral workers in service delivery, referral services for severe and complicated cases and to implement the vector control strategies.

## **7.3. Targets**

- Saturation level training for core team of trainers ( tertiary, secondary and primary)
- All levels of health care functionaries trained in prevention and control of VBDs at the end of XI plan period
- Reorientation trainings of staff every 3 to 4 years of interval.

## **Indicators**

- Proportion of medical colleges/faculty trained
- Proportion of Programme Managers/paramedical workers at State/District/PHC level trained in management of severe and complicated *Pf* malaria and analysis of surveillance data for prediction of epidemic outbreaks
- Reduction under 5 case fatality rate due to VBDs
- % Reduction of overall mortality rate due to malaria, JE, Dengue and Kala-azar
- % Reduction in morbidity malaria JE, Dengue, Kala-azar and Filariasis
- Achievement of elimination target for Kala-azar and ELF

## **Means of verification**

- Independent assessment of Integrated trainings at State/ District/ PHCs levels
- Review of training reports, pre-, & post-training assessments
- Review of reporting through MIS for prediction of epidemic outbreaks
- No. of cases referred to tertiary/secondary health care service facilities
- Medical audit for mortality due to malaria at PHCs/CHCs/hospitals



## **7.4 Strategies**

The three tier training strategy as initiated in X plan period would continue

## **7.5 Modalities**

- In addition to the modalities followed during X plan period, the learning styles of the trainees would be assessed to plan the training activities. Wherever feasible, indigenous teaching material would be selected especially for community based workers' training according to cultural practices. Similarly, epidemiological exercises on local data would be undertaken.
- To improve the receptivity of the participants, the number of lecture sessions would be minimized. Adequate learning material would be provided in advance so that the knowledge gap between the resource persons and participants can be reduced, while at the same time giving opportunity to participants to interact on issues which are not clear to them.

## **7.6 Monitoring & Evaluation**

- 80% of the medical officers trained on management of severe cases of VBDs
- 80% of the paramedical workers/health volunteers trained on service delivery (promotion of use of bed nets, larvivorous fish, IRS)
- 80% of the medical and paramedical officers trained on analyses and interpretation of data for prediction of outbreaks

## **7.7 Sustainability**

- Emphasize would be given to empower the states by proving technical human resource pool to combat the VBDs and sustain the training at all levels by repeated training and re-training of the staffs at district/ PHCs levels. Other than the Govt, public and private sector would also be trained.

## **7.8 Convergence**

- Under the NRHM to strengthen the health care service delivery at the peripheral level, a new band of community based functionaries, named as Accredited Social Health Activist (ASHA) is proposed to be placed at peripheral level. All the ASHAs would be trained on service delivery in relation to VBDs as well.

## **7.9 Outlays (2007-08 to 2011-12)**

The budget proposed for training component of NVBDCP is indicated below:

Sr. No.	Year	Funds required (Rs in crores)
1	2007-08	5.50
2	2008-09	5.50
3	2009-10	5.50
4	2010- 11	5.50
5	2011-12	5.50

\* Already incorporated in Malaria Budget

## 8. PROPOSED QUALITY ASSURANCE PROGRAMME FOR XI PLAN

### 8.1 Objective

The objective of the Quality Assurance (QA) is to provide efficient, effective, accurate and reliable laboratory diagnosis of malaria. In other words, QA is needed to consistently verify reliable and high quality products and services (malaria results) to patients (care seekers).

### 8.2 Genesis

Over the years, the quality assurance of malaria microscopy in the form of regular cross-checking of examined blood smears could not be sustained upto the desired extent due to various operational and technical reasons. One of the main reasons is vacant posts of laboratory technicians at each level that is at PHCs, malaria clinics, at State/Zones and ROH&FWs. Besides, the quantity of the negative slides (10%) is too many. In this context, as well as due to increasing trend of *P. falciparum* cases, emergence of newer foci of drug resistance and high mortality due to malaria, an urgent need has been felt to revitalize the quality assurance of the laboratory services provided under the Dte. of NVBDCP. Besides, Rapid Diagnostic Tests (RDTs) introduced into the programme recently, which is an objective test, governed by biological and environmental factors, also need a QA scheme.

### 8.3 Strategies

The whole ethos of QA is team work. Therefore, laboratories are identified at National, Regional and state levels for successfully implementing the QA programme. These laboratories are networked across the country as under:

- Dte. of NVBDCP is the nodal agency for all purpose of QA Programme on laboratory diagnosis of malaria. It is also responsible for developing Standard Operating Procedures, establishing national standards for training courses and also for preparation of training materials and modules.
- National Institute of Malaria Research (NIMR), Delhi has been identified as National Reference Laboratories (NRL) for QA of malaria microscopy. NIMR would provide technical support to the national QA programme by conducting



external quality assurance and by cross checking of slides for assessing the performance and competency of the laboratory technicians working at the peripheral laboratories. It will prepare panel slides and maintain a slide bank. They are also assigned the responsibility for monitoring and evaluation of overall functioning of the regional and state level referral laboratories time to time and provide feed back to the Dte. of NVBDCP.

- National Institute of Biologicals (NIB), NOIDA U.P. has been identified as NRL for QA of malaria RDTs. NIB would prepare QC test panels from wild parasites (malaria positive blood) from the field and send to the medical colleges and other apex institutes of various regions/states which are networked for QA. They would provide training on QA of RDT for the capacity building of the laboratory personnel in the network.
- Total 11 Regional Reference Laboratories (RRLs) were identified. There are all total 6 ICMR institutions, 33 medical colleges and 10 NIMR field stations were networked with all the existing NVBDCP network upto PHC level.

#### **8.4 Initiatives**

A monograph on Standard Operating Procedures (SOPs) has been developed, which includes all guidelines/procedures to be followed for QA from top to bottom.

#### **8.5 Sustainability**

This can be achieved through a commitment to a well planned QA programme that ensures team work with trained, competent and motivated staff supported by adequate supervision. QA also needs a logistic system that provides an adequate and continual supply of reagents and glassware, all essential functioning equipment including microscopes.

#### **8.6 M&E system**

QA works through planned teamwork. Therefore, it has to be monitored and constantly reviewed the activities at all echelons i.e., laboratory skills, standard of work are carried out by strict adherence to the SOPs and diagnosis are improved.

#### **8.7 Estimated Budget (2007-08 to 2011-12)**

Since QA is a new activity of the programme, all the laboratories networked has to be strengthened in terms of improvement of the laboratory set up and capacity building of the human resources. For this following budget is estimated.



Year	NRLs (in Rs. lakhs)		RRLs/ SRLs (in Rs. lakhs)		Total In Rs. lakhs
	NIB	NIMR*	Institutes (7)	Medical Colleges (33)	
2007-08	50.0	50.0	3.0 x 7 = 21.0	5.0x 33=165.0	286.0
2008-09	40.0	40.0	3.0 x 7 = 21.0	3.0x 33=99.0	200.0
2009-10	40.0	40.0	3.0 x 7 = 21.0	3.0x 33=99.0	200.0
2010- 11	40.0	40.0	3.0 x 7 = 21.0	3.0x 33=99.0	200.0
2011-12	40.0	40.0	3.0 x 7 = 21.0	3.0x 33=99.0	200.0
<b>Total</b>	<b>210.0</b>	<b>210.0</b>	<b>105.0</b>	<b>495.0</b>	<b>1086.0</b>

\* Including field stations

## 9. Behaviour Change Communication (BCC)

### 9.1 Experiences in X Plan

- Under the National Vector Borne Disease Control Programme, initially Information, Education and Communication (IEC) activities were being undertaken at all levels of programme implementation to increase awareness among members of the target communities regarding prevention and control of malaria and other vector borne diseases and encourage community participation. The activities involved primarily development and distribution of IEC materials and undertaking activities for disseminating information. IEC activities have been quite successful in the country as reported by KAP surveys carried out by Centre for Media Studies, New Delhi (2002) and Situation Analysis by McCann Erickson (I) Pvt. Ltd., New Delhi (2004). As per the findings, the awareness level regarding malaria, its causes and symptoms are quite high and community is also knowledgeable about treatment facilities available in their vicinity. However, knowledge and practice regarding specifics like comprehending and seeking complete treatment, intra-domiciliary sources of mosquito breeding, importance of full coverage of house under Indoor Residual Spraying (IRS) and newer preventive measures like ITNs and larvivorous fish are inadequate. Appropriate health seeking behaviour and action regarding other vector borne diseases were also deficient. In addition, there is an element of complacency concerning fever; lack of ownership and accepting responsibility with respect to initiation of preventive measures at individual and collective levels. Also, there has been limited advocacy and inter-sectoral collaboration initiatives.
- Therefore, while IEC activities continues as a support service, Behaviour Change Communication (BCC) initiative has been introduced as a process of learning that empowers people to take rational and informed decisions through appropriate knowledge; inculcates necessary skills and optimism; facilitates, stimulates pertinent action through changed mindsets, modified behavior and reinforces the same through peers and influencers.



- Currently, BCC campaign is being implemented in the country as cross-cutting intervention for enhancing community awareness, empowerment and mobilization and participation by all other stakeholders for prevention and control of malaria, filaria, kala-azar, dengue & Japanese encephalitis.
- The specific objectives of BCC campaign are to: enhance awareness regarding transmission risk reduction and treatment, availability of services at different levels; promote attitudinal and value changes among target audiences leading to informed decisions, modified behaviour; stimulate increased and sustained demand for quality prevention and care services; build support for the programme among inter-sectoral partner organizations, influential sectors of society (corporate houses, political representatives, social activists, media, non-health sector departments, etc.) and service providers (including civil society organizations); and ensure availability of services.

The BCC campaign strategy under NVBDCP is four-pronged as detailed under:

1. Advocacy, which aims at developing enabling environment by educating the political leaders, elected representatives, planners, organized sectors, professional bodies, media for building support, eliciting commitment and motivating them to be 'Advocates' for the programme.
  - Thus, priorities are defined, appropriate policies are framed, sufficient resources are allocated and directions are provided to the implementers thereby facilitating availability and accessibility of resources to community.
2. Inter-sectoral convergence as a planned process, which aims at bringing together all inter-sectoral partners in public and private sectors to determine felt needs in their domains, raise awareness of and demand for a particular intervention, ensure allocation of sufficient resources, time, implement locally suited options and initiate social mobilization.

If a disease prevention and treatment are felt needs of the society, social mobilization puts pressure on the health system to provide necessary services. Alternatively, if community is unable to recognize a disease as a threat, social mobilization initiatives are directed to create a demand for the services and also to convince people to accept certain interventions.

A broad based National Task Force for inter-sectoral collaboration exists since 1997 to share concerns and information and identify mutual areas of cooperation. Every year, the NTF meets prior to the transmission season to deliberate on the action taken by the member organizations during the previous year and finalize plans for current year. At the State/District levels, similar Task Forces/Advisory Boards/Coordination Committees have been constituted for inter-sectoral collaboration. Under the National Rural Health Mission, such broad based committees are being constituted at various levels for better coordination and undertaking joint action.



An Inter Agency Theme Group on Vector Borne Diseases comprising representatives from World Bank, WHO, UNDP, UNESCO, USAID, CDC (India) has been constituted to consolidate the efforts of the Directorate in reducing the disease burden with the objectives of: (i) sharing national and international best practices in prevention and control of malaria and other vector borne diseases; (ii) facilitating technical support to the National Vector Borne Diseases Control Programme; (iii) mobilizing resource for strengthening the programme interventions in specific areas; (iv) collaborating operational research; (v) mainstreaming control of malaria and other vector borne diseases in all socio-developmental programme initiatives by the UN and Bilateral Agencies. The first meeting of the Inter Agency Theme Group on Vector Borne Diseases was held in August 2004.

3. Communication through media – mix for: (i) strengthening knowledge, beliefs, values, attitudes, confidence, (ii) strengthening enabling environment; (iii) strengthening reinforcement through family, peers, opinion leaders like teachers, employers, doctors, other health service providers, community/religious leaders.

The process includes:

- Umbrella campaign
- Focused localized initiatives
- On ground initiatives

The media options would vary from place to place, depending specific settings, but would essentially include:

- Inter-personal communication [specifically for understanding concepts of health, illness and prevention and treatment of disease (traditional vs modern) and collaboration with traditional healers, local influencers for adopting suitable options]
- Electronic
- Print
- Outdoor Publicity (viz., Miking, Drum beating, Rallies, Wall paintings, Exhibitions)

Under the Programme, the BCC materials are developed with a recognizable 'brand' so that the community makes a quick association with what they are seeing, reading or hearing. The NVBDCP Logo, which was launched in 2005 are used extensively for improved recognition of campaign materials even by illiterates.

4. Monitoring and evaluation of BCC campaign, which aims at



- Demonstrating that particular intervention/medium reached and served its purpose;
- Obtaining guidance for programme decisions, policy review;
- Determining whether improvements in health outcomes are causally linked to a given intervention or a given behavioural change

BCC activities are carried out throughout the year with intensive campaign in the month of June before the transmission season at the national and state levels.

**Public-Private Partnership:** Partnership with private sector, Non-Governmental Organizations (NGOs), Faith Based Organizations (FBOs), Community Based Organizations (CBOs) and Local self-government (Panchayat/Village Councils/Tribal Councils, etc.) is being promoted under NVBDCP. The objective is to provide uniformity in diagnosis, treatment and monitoring through a wider programme base to maximize access to anti-malaria treatment and appropriate and locally applicable vector control measures. Such collaboration is expected to initiate behaviour change and effective and sustained action towards community mobilization. The NGOs, FBOs, CBOs, Panchayat, corporate sector, etc., would complement and supplement the government efforts to make a significant dent in the malaria burden and bring about betterment of overall health and economic condition of the population in the endemic areas for malaria. The Directorate of NVBDCP has already developed guidelines on Public-Private Partnership for control of malaria.

NVBDCP is advocating two types of partnership for NGOs, FBOs, CBOs and Panchayat:

- i. **Category 1:** With Local self-government (Panchayat) or Panchayat level CBO (population coverage - minimum of 5000 population)
- ii. **Category 2:** Block level NGO/FBO or any NGO/FBO having Block level service delivery structure (population coverage - minimum of 1,00,000 population)

The schemes devised for collaboration with NGOs, FBOs, CBOs and Panchayat are:

1. **Provision of early diagnosis and prompt treatment (EDPT) –**
  - a. **Scheme 1:** Provision of outreach services – Drug Distribution Centre (DDC), Fever Treatment Depot (FTD)
  - b. **Scheme 2:** Provision of microscopy and treatment services
  - c. **Scheme 3:** Hospital based treatment and care of severe and complicated malaria cases

## **2. Integrated vector control –**

- a. **Scheme 4:** Promotion of insecticide treated bed nets, insecticide treatment of community owned bed nets and distribution of insecticide treated bed nets in selected areas
  - b. **Scheme 5:** Promotion of larvivorous fish
  - c. **Scheme 6:** Indoor Residual Spraying (IRS)
- Awareness generation/Behaviour Change Communication will be integral part of all the above-mentioned schemes.
  - All these schemes will be implemented as per the policies and guidelines of NVBDCP.

During 2004 and 2005, several consultations/advocacy sessions were held at national, regional and state levels with the Civil Society Organizations/Other Govt. Departments like Railways, Agriculture, Tribal welfare, Army and Paramilitary organizations, Tea Associations/Estates, corporate sector, Chambers of Commerce, Confederation of Indian industry for their involvement in malaria control activities.

The Confederation of Indian Industry is coordinating with the industrial initiatives in up-scaling specific prevention and control measures like ITNs. Meetings were convened in Orissa, Chhattisgarh in coordination with the State Health Department and the corporate sector to ensure adoption of Workplace Guidelines in the areas of operation. A Guide to malaria prevention with special emphasis on ITNs (by Confederation of Indian Industry), Guidebook on involvement of NGOs in malaria control and Workplace Guidelines on malaria control have already been developed.

### **Proposed BCC during XI Plan**

During the XIth Plan period, the same BCC strategies and mode of implementation and Public-Private Partnership Initiative would be followed, funds for which have been reflected under each of the five vector borne disease component. However, the activities will be undertaken in an integrated manner as per the disease prevalence and the transmission season to maximize the outputs vis-à-vis the inputs.

### **10. Technical Resource Consortium**

In the XI Plan Technical Research Institutes for primary teaching support to states in implementation of National Vector Borne Disease Control Programme as well as supervision and monitoring of programme, the following ICMR institutions have been identified:

- NIMR for Malaria
- VCRC for Filariasis



- CRME for JE and Dengue
- RMRI, Patna for Kala Azar

In addition to above, other multidisciplinary institutions in the country will also be considered for need based collaboration. These institutions will be provided financial support for undertaking operational research as well as supervision and monitoring, besides the IDVC field units of NIMR.

# **11. TOTAL PROPOSED OUTLAYS FOR XI FIVE-YEAR PLAN PERIOD (2007-08 to 2011-12)**

Rs. In Crores

Sl. No.	Year	Outlays
1.	2007-08	703.82
2.	2008-09	689.52
3.	2009-10	687.51
4.	2010-11	697.52
5.	2011-12	716.21
	<b>Total</b>	<b>3494.58</b>

**XI Plan Funding Pattern**

Sl. No.	States/UTs	Central Govt. (operational cost)	State Govt.	World Bank/ GFATM
1.	North Eastern States	100%		
2.	Union Territories	100%		
3.	Remaining Rural and Urban Areas (except for Kala-azar)	50%	50%	
4.	Kala-azar Elimination	100%		
5.	Elimination of Lymphatic Filariasis	100%	Infra structure & Staff for Implementation	
6.	Hard core areas in 24 states (for malaria)	50%	50%	Additional inputs

**Note:**

1. Pf. Monitoring team be continued with Regional Office for Health & Family Welfare
2. Operational cost to be provided as central share
3. To achieve Kala-azar Elimination by 2010, Kala-azar activities be funded fully by the center and infrastructure to be provided by the States.
4. To achieve Elimination of Lymphatic Filariasis (ELF) by 2015, Preparatory activities including funds for drug distribution be funded fully by the center and infrastructure to be provided by the States.
5. In view of ELF programme in all filaria endemic districts, integration of NFCP Units by merging the treatment activities with district hospitals and anti larval operation with Urban Malaria Scheme. The staff be reallocated by State
6. To ensure quality of laboratory services, Quality Assurance Programme on malaria diagnostics be continued
7. Though no additional manpower is proposed, salaries and allowances for the key posts lying vacant in States as on 01.04.2002 be funded by the center for XI Plan period.



## PROCUREMENT PATTERN DURING XI PLAN

CENTRAL GOVERNMENT	STATE GOVERNMENT/LOCAL BODIES ETC.
<ol style="list-style-type: none"> <li>1. Insecticides for high risk areas including DDT, Malathion and Synthetic Pyrethroids</li> <li>2. All materials including drugs, material &amp; equipment, vehicles etc. for Elimination of Kala-azar and Lymphatic Filariasis</li> <li>3. All materials for UTs if necessary</li> <li>4. Emergency requirements for epidemics, if necessary</li> <li>5. The states will be authorized for procurement of Materials and Equipment and items required for implementation out of cash assistance released to states after approval of NVBDCP</li> </ol>	<ol style="list-style-type: none"> <li>1. All materials except DDT (for vector borne diseases other than Kala-azar) required by the state over and above supply of GOI</li> <li>2. All infrastructure required for programme implementation</li> </ol>

# PROPOSED OUTLAY FOR NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME FOR XI FIVE YEAR PLAN

Sl. NO.	Component	Proposed cost (Rs in Crores)
1	Drugs	261.43
2	Diagnostics	105.88
3	IRS	498.20
4	Larvicides	102.54
5	Bednet	312.09
6	Fogging Machine	6.37
7	Vehicles	18.75
8	Capacity building	132.05
9	BCC	261.90
10	Quality assurance	10.86
11	Grant in Aid to North Eastern states including Sikkim for implementation of programme activities through state/ district societies	75.00
12	Grant in Aid to states/UTs (Other than NE States) for implementation of programme activities through state/ district societies	432.80
13	Establishment NVBDCP/ROH&FW	50.00
14	JE HQ Contingency	1.00
15	Salaries for vacant posts *	900.00
16	Research & Development including approved support to NIMR**	15.00
17	Hiring of consultancy services/ appraisals/ evaluation etc.	5.00
	<b>Total</b>	<b>3188.87</b>
	<b>Kala-azar</b>	
18	IRS(DDT)	162.75
19	Drugs	20.23
20	Diagnostics	1.04
21	Lab strengthening	2.60
22	Case search	13.00
23	Spray Pumps	4.26
24	Operational cost	66.80
25	Mobility & supervision	19.50
26	Capacity building	7.80
27	BCC	6.50
28	Monitoring & evaluation	1.25
	<b>Kala-azar Total</b>	<b>305.73</b>
	<b>Grand Total</b>	<b>3494.60</b>

\* For filling up vacant posts of male MPWs, Laboratory Technicians and Entomologists on contractual basis at State/Zonal/District/PHC level.

\*\* Exclusively for operational research to be sponsored by programme.



NVBDCP Budget for XI Plan ( Rs. in thousands)						
	2007-08	2008-09	2009-10	2010-11	2011-12	Total
	476524	498423.5	521568.13	545934.87	571874.11	2614324.6
Drugs Mal & Fil	152690	164905.2	178097.62	192345.43	207733.06	895771.3
Diagnostics mal	11000	0	0	0	0	11000
Elisa Reader Den	11000	11000	12000	12500	13000	59500
Elisa Kit DEN & JE	1260	1260	0	0	0	2520
Physiotherapy JE	42000	48000	0	0	0	90000
Ventilator JE	217950	225165.2	190097.62	204845.43	220733.06	1058791.3
Diagnostics Sub total	990913	935239.95	974329.2	1017872.2	1063596.2	4981950.55
IRS Mal, JE & Den	197050	200900	205000	209100	213300	1025350
Larvicides	564800	593040	622692	653826.6	686517.93	3120876.53
Bednet	39280	24400	0	0	0	63680
Fogging Machine JE & Den	125000	0	0	0	62500	187500
Vehicles						
Training	55000	55000	55000	55000	55000	275000
Mal	16900	16900	16900	16900	16900	84500
Den	54900	54900	54900	54900	54900	274500
JE	137300	137300	137300	137300	137300	686500
Fil	264100	264100	264100	264100	264100	1320500
Training Sub total						
BCC	150000	150000	150000	150000	150000	750000
Mal	13000	13000	13000	13000	13000	65000
Den	18300	18300	18300	18300	18300	91500
JE	342500	342500	342500	342500	342500	1712500
Fil	523800	523800	523800	523800	523800	2619000
BCC Sub total						
Grant in Aid	150000	150000	150000	150000	150000	750000
NE States	480000	480000	480000	480000	480000	2400000
Mal	5000	5000	5000	5000	5000	25000
Mal Operational Research	1500	1500	1500	1500	1500	7500
JE Operational Research	379100	379100	379100	379100	379100	1895500
Filaria	865600	865600	865600	865600	865600	4328000
Grant in Aid Sub total	2000	2000	2000	2000	2000	10000
JE HQ Contingency	100000	100000	100000	100000	100000	500000
Establishment	1800000	1800000	1800000	1800000	1800000	9000000
Vacant post salary	30000	30000	30000	30000	30000	150000
R&D to NIMR	28600	20000	20000	20000	20000	108600
Quality Assurance	10000	10000	10000	10000	10000	50000
Consultancy/ Evaluation	6385617	6242668.65	6279186.94	6397079.1	6584021.3	31888572.99
Total						



NVBDCP Budget for XI Plan ( Rs. in thousands)						
Contd...						
	2007-08	2008-09	2009-10	2010-11	2011-12	Total
<b>Kala-azar</b>						
IRS(DDT)	325500	325500	325500	325500	325500	1627500
<b>Sub-total</b>	<b>325500</b>	<b>325500</b>	<b>325500</b>	<b>325500</b>	<b>325500</b>	<b>1627500</b>
<b>Drugs</b>						
SSG	21000	21000	10500	5250	5250	63000
Amphotericin-B	3680	3680	1840	920	920	11040
Miltefosine	42740	42740	21370	10685	10685	128220
<b>Sub-Total</b>	<b>67420</b>	<b>67420</b>	<b>33710</b>	<b>16855</b>	<b>16855</b>	<b>202260</b>
RK39	3470	3470	1735	868	868	10411
Lab strengthening	5200	5200	5200	5200	5200	26000
Case search	26000	26000	26000	26000	26000	130000
Spray Pumps	21280	21280	0	0	0	42560
Operational cost	133600	133600	133600	133600	133600	668000
Mobility & supervision	39000	39000	39000	39000	39000	195000
<b>Sub-Total</b>	<b>228550</b>	<b>228550</b>	<b>205535</b>	<b>204668</b>	<b>204668</b>	<b>1071971</b>
Capacity building	15600	15600	15600	15600	15600	78000
BCC	13000	13000	13000	13000	13000	65000
Monitoring & evaluation	2500	2500	2500	2500	2500	12500
<b>Sub-Total</b>	<b>31100</b>	<b>31100</b>	<b>31100</b>	<b>31100</b>	<b>31100</b>	<b>155500</b>
<b>Kala-azar Total</b>	<b>652570</b>	<b>652570</b>	<b>595845</b>	<b>578123</b>	<b>578123</b>	<b>3057231</b>
<b>Total NVBDCP</b>	<b>7038187</b>	<b>6895239</b>	<b>6875032</b>	<b>6975202</b>	<b>7162144</b>	<b>34945804</b>

The proposal for XI Plan period in respect of NVBDCP has been worked out to Rs. 3494.59 crore. Out of this total proposal, the proposal for Kala-azar Elimination is Rs.332.21 crore and for Elimination of Lymphatic filariasis is Rs.469.45 crore. The difference in the proposal submitted during X plan and during XI plan period is not substantial as the X plan proposal from erstwhile National Anti-Malaria Programme (now known as NVBDCP) was for Rs.2661.99 crore with the indication that additional fund of Rs.332 crores would be available from World Bank for EMCP. This made the total proposal of the then NAMP to the tune of Rs.2993.99 crore (including Rs.332.21 crore for Kala-azar Control/ Elimination Programme). Justification for increase in total allocation proposed in XI Plan period, is annexed.



# ANNEXURE

Sl. NO.	Component	XI Plan Proposed cost (Rs in Crores)	X Plan Proposed cost (Rs in Crores)	Reasons	Overall Justification
1	Drugs	261.43	120.00	Increased due to introduction of combination drug for malaria and DEC for MDA ( approx 140 crore tablets per year)	The proposal during X plan submitted was to the extent of Rs.2661.99 crores. It was also submitted that the additional fund of Rs.332 crores would be available through World Bank for EMCP. This made the total projection of Rs. 2993.99 crores during X plan.
2	Diagnostics	105.88	15.00	Diagnostics for Dengue & JE are included in addition to malaria.	
3	IRS	498.20	1078.60	Reduction in the cost of Synthetic Pyrethroids for indoor residual spray.	
4	Larvicides	102.54	113.75	Efforts have also been made to reduce indoor residual spray and promotion of other alternative vector control measures such as insecticide treated bednets.	
5	Bednet	312.09	Nil	Upscaling of ITN is proposed in XI plan.	Against this proposal, the initial allocation of Rs.1370 crores including EMCP was made which was revised and reduced to Rs.1349 crores as X plan outlay in respect of NVBDCP.
6	Fogging Machine	6.37		Considering JE and Dengue epidemic, the component is proposed.	
7	Vehicles	18.75		Mobility is most essential for field visits to supervise and monitor the programme activity. This has affected the monitoring and therefore it is proposed as one time support to states/Uts.	
8	Capacity building	132.05	60.00	To strengthen the capacity of service providers, consumers (Public) and Core trainers including Medical Colleges, Decision makers, three tier training programme is introduced for which more fund will be required to cover six diseases.	The total budget allocated as per approved BE since 2002-03 to 2006-07 is Rs.1469.03 crores. However, the revised
9	BCC	261.90			

10	Quality assurance	10.86			To provide efficient, effective, accurate and reliable laboratory diagnosis of malaria, QA is needed to consistently verify reliable and high quality products and services (malaria results) to patients (care seekers). This component is added in the XI plan.	estimate for 2002-03 to 2005-06 and BE 2006-07 works out to be Rs.1335.91 crores which is well within the approved X plan allocation.
11	Grant in Aid to North Eastern states including Sikkim for implementation of programme activities through state/ district societies	75.00	28.20		Operational Cost to NE/UTs (excluding spray wages) was added in X Plan whereas spray wages being part of Operational cost has been shown in Grant in Aid	During the year 2002-03 to 2005-06, against the RE of Rs.964.33 crores, the expenditure has been to Rs.884.91 crores (Rs.91.76%).
12	Grant in Aid to states/UTs (Other than NE States) for implementation of programme activities through state/ district societies	432.80			IN X Plan, it was not reflected, however, the cash assistance to states under World Bank assisted Project was released through state societies out of EAC Fund. In XI Plan The increase is due to inclusion of cash assistance to other states for preparatory activities for MDA to eliminate Lymphatic filariasis and to meet the operational cost for implementation of NVBDCP activities for prevention & control of malaria, JE, Dengue and Chikungunya. In addition, the provision for assistance towards operational research in Malaria & JE has been kept.	
13	Establishment NVBDCP/ROH&FW	50.00	45.00		This component is to meet the establishment cost including salary for the staff at headquarter and ROH&FW.	
14	JE HQ Contingency	1.00				



15	Salaries for vacant posts *	900.00	851.73	This component was proposed during last plan and is being proposed in this plan also so that the technical post required for the programme implementation at various levels may be filled. In view of 50% shortage of MPW (male), it is proposed that GOI should provide funds for filling up 50% of the vacant posts through contractual schemes while remaining 50% should be filled by State Government. (So far cost for MPW(male) component is met by state resources and MPW(female) is met fully by GOI)
16	Research & Development including approved support to NIMR**	15.00	10.00	The support to NIMR for R&D is released at the rate of Rs.1.5 crore per year (7.5 crores for five years). In addition, Rs.1.5 crore per year has been proposed for support to research & development by ICMR institutions including NIMR (MRC) for integrated disease control projects to support states in providing technical assistance and operational records.
17	Hiring of consultancy services/ appraisals/ evaluation etc.	5.00	5.00	
	<b>Total</b>	<b>3188.87</b>	<b>2327.28</b>	
	<b>Kala-azar</b>			
18	IRS(DDT)	162.75	276.89	Calculation has been made based on actual requirement of DDT 50% wdp.
19	Drugs	20.23	26.66	It also includes the cost of oral drug Miltefosine.
20	Diagnostics	1.04	6	In X Plan, a total of Rs.6 crore was proposed for diagnostics / strengthening of lab./treatment facilities whereas in XI Plan diagnostics & lab. Strengthening is separately mentioned.
				Within the total allocation of Rs.1349 crores, the allocation under BE since 2002-03 to 2006-07 is Rs.180.86 crores for Kala-azar Control Programme. The expenditure for last four years, except current year, has been Rs.101.69

21	Lab strengthening	2.60			Strengthening of secondary and territory level referral laboratory services are proposed.	crore against the corresponding allocation of Rs.180.86. There has been problems in implementation of Kala-azar elimination programme and timely utilization of funds by the Kala-azar endemic states. Considering the goal of elimination of Kala-azar by the year 2010, the fund of Rs. 305.72 crore has been proposed for XI plan.
22	Case search	13.00			Quarterly active house-to-house search is proposed for early detection of cases and prompt treatment.	
23	Spray Pumps	4.26			Provision for spray pumps for initial two years has been kept in XI Plan.	
24	Operational cost	66.80		6	This fund will be released as cash assistance to meet 100% operational cost as per GOI order for Kala-azar Elimination.	
25	Mobility & supervision	19.50			It includes the engagement of Coordinator and their mobility support for every Kala-azar endemic districts.	
26	Capacity building	7.80		9.37		
27	BCC	6.50		6.29		
28	Monitoring & evaluation	1.25		1		
	<b>Kala-azar Total</b>	<b>305.72</b>		<b>332.21</b>		
	<b>Grand Total</b>	<b>3494.59</b>		<b>2659.49</b>		



# REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

## 1. Introduction

India is the highest TB burden country globally accounting for one fifth of the global incidence. Every year 1.8 million people in India develop tuberculosis (TB), of which 0.8 million are infectious smear positive cases. TB kills more people than any other single infectious agent; nearly 370,000 die from it – more than 1000 every day. The prevalence of TB disease in the population in 2000 has been estimated at 3.8 million bacteriologically positive cases. The emergence of HIV-TB co-infection and multi drug resistant tuberculosis has increased the severity and magnitude of this TB epidemic. HIV is now considered the most powerful risk factor for the progression of TB infection to disease. More than 5 million people in the country are HIV positive, of which nearly 2 million are co-infected with HIV and TB. About 5% of TB patients are estimated to be HIV positive. Though the prevalence of MDR TB among new cases is <3%, when translated into numbers, they are significant. Tuberculosis has devastating social costs as well – data suggests that each year more than 300,000 children are forced to leave school because their parents have TB, and more than 100,000 women with TB are rejected by their families. With an estimated 40% of the population infected, and an estimated 10% of these likely to break TB disease in their lifetime, TB continues to be an important public health problem in the years to come.

The World Health Assembly declared TB as a global emergency and adopted Directly Observed Treatment Short-course (DOTS) as a cost effective strategy for control of TB. It had laid down the target to achieve complete coverage under DOTS across the countries in the world, and in them called for detection of 70% of new smear positive cases, and successfully treat 85% of them, in order to have impact on TB burden in the countries. Goal 6 of the Millennium Development Goals urges nations to combat HIV/AIDS, malaria and other diseases. The specific targets proposed for TB control are to halt and begin to reverse its incidence by 2015 (Target 8); to halve the prevalence of TB disease and deaths due to TB, between 1990 and 2015 (Indicator 23) and detect 70% of new infectious cases and to successfully treat 85% of detected sputum positive patients (Indicator 24)

## 2. TB Control efforts in India

The National TB Programme (NTP) was formulated by National TB Institute, Bangalore in 1962. The programme was aimed at early case detection in symptomatic patients seeking health care through sputum microscopy and x-ray and effective domiciliary treatment with chemotherapy. In 1992, the Government of India, together with the World Health Organization (WHO) and Swedish International Development Agency (SIDA), reviewed the National TB Programme and concluded that it suffered from managerial weakness, inadequate funding, over-reliance on x-ray, non-standard treatment regimens, low rates of treatment



completion, and lack of systematic information on treatment outcomes. Programme review showed that only 30% of patients were diagnosed and only 30% of those treated successfully. Based on the findings and recommendations of the review in 1992, the GOI evolved a revised strategy.

### **3. Revised National Tuberculosis Control Programme (RNTCP)**

The RNTCP is an application in India of the WHO-recommended the Directly Observed Treatment, Short Course (DOTS) strategy to control TB with the objective of curing at least 85% of new sputum positive TB patients and detecting at least 70% of such patients.

The components of the strategy are:

1. Political and administrative commitment at all levels
2. Diagnosis through quality sputum microscopy of patients attending peripheral health facilities
3. Uninterrupted supply of Short-Course Chemotherapy drugs, which are given in patient-wise boxes
4. direct observation of treatment through involvement of peripheral health functionaries, NGOs and community volunteers, and
5. Systematic monitoring, evaluation, and supervision at all levels.

To determine its feasibility, the revised strategy was pilot tested beginning in 1993 covering a population of 2.35 million in 5 sites. Following on from the success of these pilot sites, the revised strategy was expanded to a population of 13.85 million in 1995 and 18 million in 1996. Encouraged with the success of the pilot project, the Revised National TB Control was launched in 1997 with the World Bank assistance to cover a population of 271 million in 102 districts over a period of five years. The project was implemented in a phased manner to ensure that quality of services is maintained. In early 2002, the World Bank assisted RNTCP was extended for another 2 years within the same budgetary provision to cover 700 million population by 2004. The project was further extended for a year till September 2005 to enable coverage of the whole country as per schedule. In addition to the above, DFID and DANIDA supported RNTCP to cover the entire states of Andhra Pradesh and Orissa. Global Fund for AIDS, Tuberculosis and Malaria (GFATM) are supporting DOTS expansion in 3 States of Jharkhand, Chhattisgarh, and Uttaranchal (56 million populations). In addition, the second round of GFATM covers the remaining 56 districts of Bihar and Uttar Pradesh with a population of 110 million and the fourth round of GFATM is supporting RNTCP implementation in the states of Andhra Pradesh and Orissa w.e.f November 05 and January 2006 respectively. The Global Drug Facility (GDF) has provided anti-TB drugs as commodity grant for 200 million population for 3 years since 2003.

In the past 8 years RNTCP has been expanding rapidly as shown below:



Year end	1998	1999	2000	2001	2002	2003	2004	2005	Mar 2006
Population covered*	111	148	333	450	547	775	947	1080	1114 (Entire country)

\* the populations mentioned above are cumulative, in millions, using population of census-2001 as the baseline (for 1998-2004) and projected population up to 2005.

On March 24, 2006, all districts in the country (after fulfilling stringent appraisal criteria) are implementing RNTCP, allowing access of DOTS to all TB patients in the country

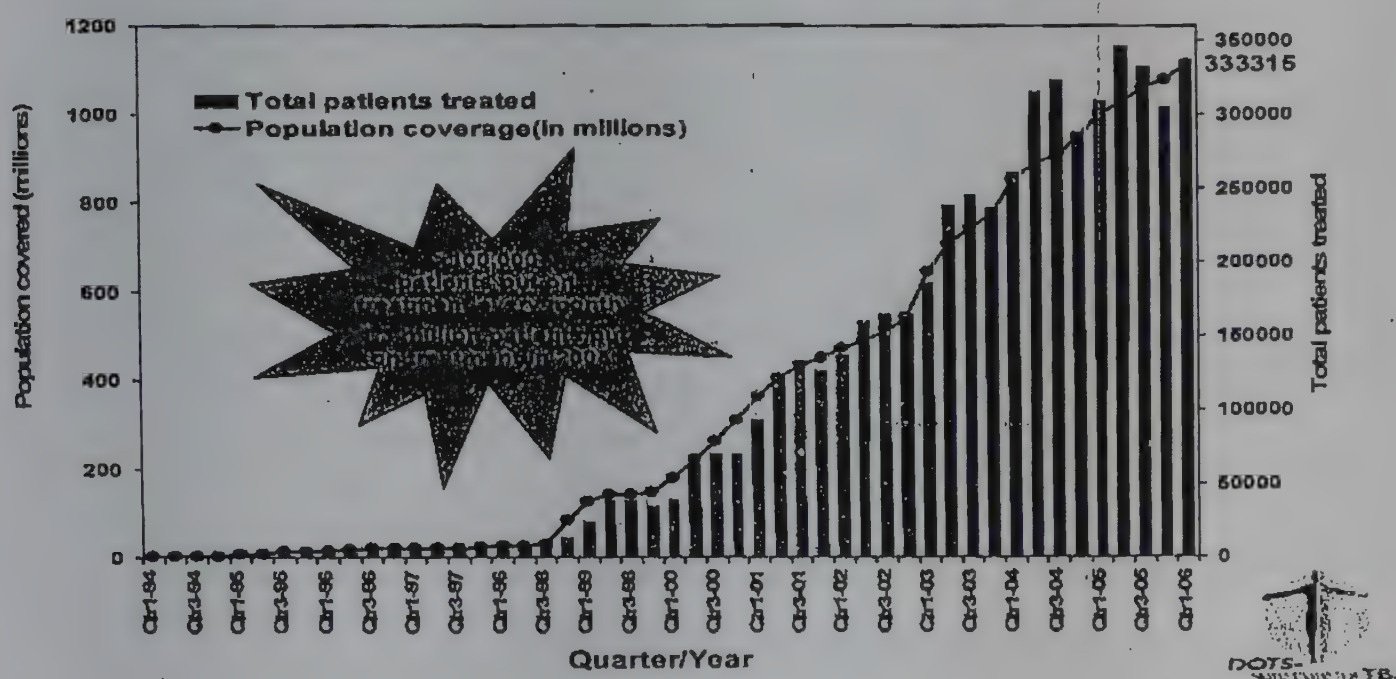
#### 4. Initiatives taken and Achievements of RNTCP Phase I (1997 to 2006)

1. On March 24, 2006, all districts (632 districts/reporting units) in the country (after fulfilling stringent appraisal criteria) are implementing RNTCP.
2. The decentralization process of programme implantation through the formation of state and district societies has continued at the state and district levels as per the project objectives. The states have the responsibility for planning, logistics management, printing and budgeting of the programme within the framework of the National policy. The important change of the routing of funds to the districts through the state has been implemented throughout the country. Management flexibility has been given to the states by providing them, for example the autonomy of taking the decision to increase the number of designated microscopy centres and TUs up to a maximum of 10% of the existing total, of recruiting contractual Laboratory Technicians up to 20% and Medical Officers at the District TB Centre up to 15%, wherever it is felt programmatically essential. The programme has, furthermore, given flexibility to the districts in the areas of budgeting, planning, procurement and logistics management.
3. Sound training materials have been developed for all categories of staff. The training materials are modular in content and have been recently revised keeping in view the new developments in RNTCP. Modular trainings ensure uniform standards and avoid possible subjectivity and bias of the trainers. More than 5 lakh health staff have been trained on RNTCP since the beginning of the programme.
4. Diagnostic facilities in nearly 11,800 laboratories throughout the country have been established. As a result, the proportions of sputum positive cases confirmed in the laboratory are double that of the previous programme and are on par with international standards. Quality Assurance protocol implemented in all the states
5. Over 5.45 lakh patients have been initiated on treatment since the inception of the programme till March 2006 (Figure 1). During the year 2005, nearly 1.3 million patients were initiated on treatment. Sputum positive case detection rate of 66% and treatment success rate of 86% was achieved (Fig 2)

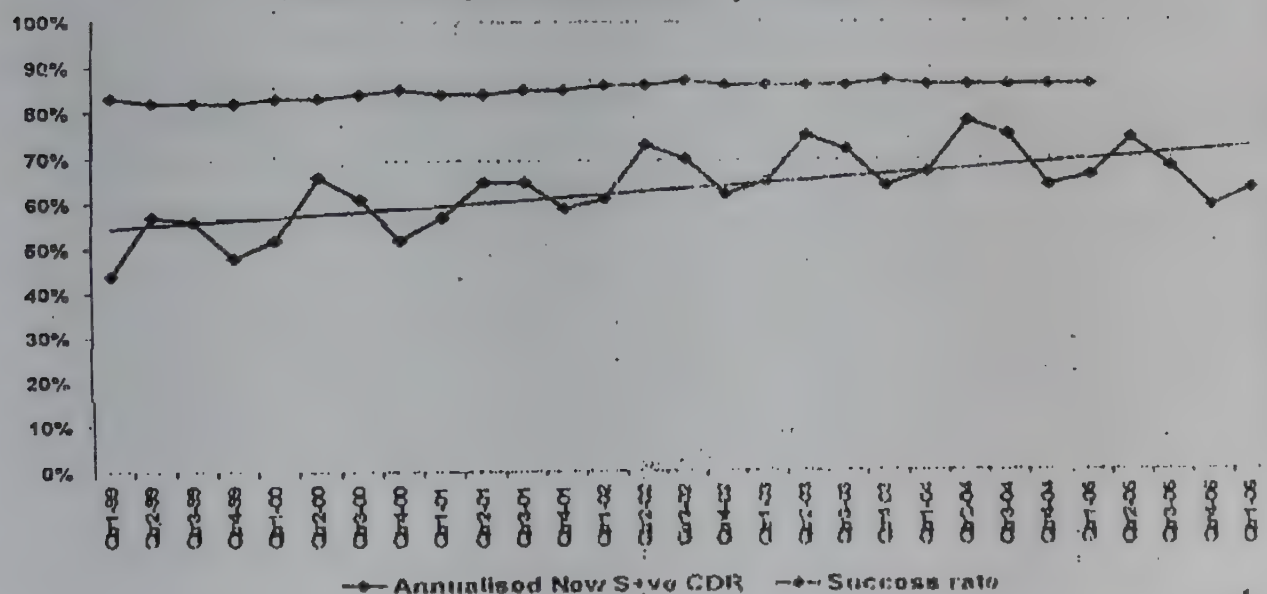


6. M & E System: RNTCP recording and reporting system is robust and provides for the routine collection of the required data in a simple and standardized manner, which gives the information for the estimation of the indicators. It also facilitates the follow-up of patients at the individual level. Each and every patient registered under the system is monitored and treatment outcome given. To facilitate the process electronic connectivity has been established at district level upwards, and data entry operator provided. The reports are transferred using specially designed data management software 'Epicentre'. Over 95% of the reports were received electronically in 2005 and 100% of the reporting units from TU/district have reported for all the implementing quarters.
7. Involvement of other sectors: The programme has successfully involved over 200 medical colleges, 2000 NGOs, 10,000 Private Practitioners and over 100 corporate sector health units.

**Fig 1: Population covered under DOTS and total TB patients put on treatment in each quarter**



**Fig 2: Case detection rate (NSP) and treatment success rate in DOTS areas, 1999-2006**



• Population projected from 2001 census

• Estimated no. of NSP cases - 75/100,000 population per year (based on recent ARTI report)



9. TB-HIV collaboration: Cross referral mechanism between VCTC and RNTCP, diagnostic and treatment services is now being implemented in 14 states. Substantial numbers of VCTC clients are being referred to RNTCP, diagnosed as TB and initiated on DOTS treatment. Similarly large numbers of TB patients are being referred to VCTC for HIV testing and a significant proportion of them have tested HIV positive. In the year 2005, more than 23000 TB suspects were referred from VCTCs to RNTCP and of them 10638 were diagnosed as having TB and more than 29000 TB patients were tested for HIV and of them 6338 were HIV positive. The modules for TB-HIV co-infection have been revised and published jointly by NACO and CTD
9. Information, Education and Communication (IEC): A training module for improved Inter-Personal Communication (IPC) skills has been developed and incorporated in the existing modules. IEC strategy at different levels has been planned. A mass media agency at the national level had been engaged for undertaking IEC activities till Sep. 2005. The process for selection of IEC agency for RNTCP II has been initiated. Web-based resource centre for IEC materials has been made available on the programme website.
10. Impact of the programme: TB mortality in the country has reduced from over 5 lakh deaths per annum at the beginning of the programme to around 370,000 deaths per annum currently. Preliminary results from project area of TRC, Chennai suggest decrease in incidence of TB disease. National estimates of ARTI prior to 2000 were 1.7 and estimates based on National ARTI survey in 2001-03 is 1.5.

## 5. Achievements of X Five Year Plan:

Detailed targets, indicators and achievements of Xth Plan are given in Annex I.

## 6. Outlays and expenditure (2002-03 to 2006-07)

Budgetary Inputs in X<sup>th</sup> Plan

10<sup>th</sup> Plan allocation (2002-2007): Rs 662 crores

Year wise details	Allocation (Rs. in Crores)	Expenditure (Rs. in Crores)
2002-2003	115.00	96.95
2003-2004	115.00	117.90
2004-2005	125.00	133.63
2005-2006	186.00	187.70
2006-2007	202.17	



## PART II – PROPOSED XI FIVE-YEAR PLAN

### 1. Key Lessons learnt from Xth Five Year Plan

The experience of RNTCP to date shows country that a successful DOTS programme can be implemented in a low income-high burden setting like India. However this has been achieved as a result of the programme being appropriately designed, rigorously monitored during preparation and effectively managed after implementation. Some of the important factors which have enabled this success, include:

- Formation of TB Control Societies in the States and Districts have helped in direct release of funds, thereby ensuring fund provision for TB control activities and flexibility in fund utilization at the levels where the actual services are provided
- Strengthening the existing infrastructure and staffing levels prior to service delivery. Ensuring full-time State and District TB officer are in post, provision of contractual support staff at the State and Districts, and ensuring mobility of staff by provision of vehicles and POL to enable staff to carry out their assigned roles. Establishment of a District TB Centre (DTC) where non-existent, State Drugs Stores, up-gradation and / or renovation of the laboratory and drug stores in the districts, supply of binocular microscopes to each RNTCP Designated Microscopy Centre and office equipments for the DTC, strengthened the infrastructure to implement the programme. A special sub-district unit for supervision, the TB Unit (TU), manned by a designated Medical Officer TB Control (MoTC) full-time, RNTCP Senior TB Treatment Supervisor (STS) and a full-time RNTCP Senior TB Laboratory Supervisor (STLS), was established for average population of 500,000 (for a population of 250,000 in tribal and hilly areas). Sub-district level supervision by the STS and STLS has been a key factor in the success of the RNTCP.
- Modular training for all levels of staff. A detailed training plan specifying the trainers, level, course and duration of training for different categories of staff, has ensured the quality of training ensured a uniform standard of training throughout the country and removed the subjectivity of the trainer(s).
- Systematic appraisal of each district before start of service delivery. The appraisal process ensured that each district meets a minimum standard before starting RNTCP service delivery and therefore ensuring good quality of subsequent programme implementation.
- Use of patient-wise box (PWB). The use of the patient-wise box for the packaging of anti-TB drugs has ensured that no patient can ever run out of drugs in the middle of treatment. The use of the PWB has also made the management of the drugs, including the ordering and distribution easier. Intensive monitoring of drug stock at the various levels has been made possible through the Monthly and Quarterly Programme Management Reports



have also ensured uninterrupted supply of drugs and limit expiry or wastage of drugs.

- Intensive monitoring and supervision of all aspects of the programme at every level has been essential to the success of the programme. These reports are analyzed at all levels, and feedback given to the reporting units on their performance and links to the release of funds and drugs.
- Ensuring full-time technical support and supervision. In addition to the routine supervision by the Central and State levels, technical support through a network of WHO-contracted local consultants throughout the country, has facilitated both preparatory activities and once services are implemented, in ensuring the quality of the RNTCP services provided.
- Clear objectives, policies and guidelines. Setting clear and achievable objectives at the start of the project, helped focus programme activities in order to achieve them. The availability of clear cut policy and guidelines on the major aspects of the programme e.g. TB Control Society guidelines, checklist/formats for supervision, appraisals, evaluations etc., from the start of the programme ensured a smooth implementation of the programme. On-going updating and development of RNTCP policies and guidelines for new areas of activity e.g. involvement of private practitioners in the RNTCP, ensured the technical base of the programme and assisted increased acceptability amongst other stake-holders.
- Delivery of RNTCP services through a mix of public-private providers is feasible, and has resulted in an increased case detection. However for PPM activities to be successful, a strong public health sector presence, with adequate supervisory capacity, is required.
- Continued central level drug procurement is crucial. An attempt to decentralize the procurement of loose drugs was made during Phase I of the project. However almost all states were unable to procure the said drugs. In addition, in the process of decentralized procurement, the cost reduction gained by the economy of scale in central level procurement, was lost. As a result of this experience, it was decided to return to centralized procurement of RNTCP loose drugs. In addition since stringent quality assurance of drugs is an essential component of the DOTS strategy, centralized procurement of all RNTCP drugs was continued. internal and external quality assurance systems for the drugs supplied, following both GoI and RNTCP policies and guidelines, are crucial.
- Delays in drug procurement led to challenges in maintaining services. Unpredictable lead time for drug procurement, slow decentralization of distribution systems, and an inability to maintain adequate buffer stocks, led to challenges in maintaining services at periods. Although the programme plans to continue with centralized procurement of anti-TB drugs during the next Phase of the project, this centralized procurement may not be a single-point procurement system and may be complemented by partner organizations of the RNTCP such as GDF, to ensure timely delivery of drug supplies and continuous availability of adequate drug stocks at all levels.



## **RNTCP Phase II (2006-2010)**

(upto March 2007 of 10<sup>th</sup> Plan and from 1<sup>st</sup> April 2007 to September, 2010 of 11<sup>th</sup> Plan)

The Phase-II of the World Bank assisted RNTCP has been approved for continuation of the revised strategy for a period of another five years from October 2005 to September 2010. This will consolidate, maintain and further improve the achievements of the first phase. Phase II of the RNTCP is a step towards achieving the TB-related Millennium Development Goal (MDG) targets. DOTS remain the core strategy. The period of the Phase II project from October 2005 to September 2007 is in the 10<sup>th</sup> Plan and from April 2007 to September 2010 would fall in 11<sup>th</sup> Plan.

### **2. Goal and Objectives of RNTCP Phase II**

#### **2.1 Goal:**

The goal of TB control Programme is to decrease mortality and morbidity due to TB and cut transmission of infection until TB ceases to be a major public health problem in India.

The goal would be achieved by the implementation of the new Stop TB Strategy of TB Control which has the following components:

- Pursue high quality DOTS expansion and enhancement
- Address TB HIV, MDR-TB and other challenges
- Contribute to health system strengthening
- Engage all care providers
- Empower people with TB and communities
- Enable and promote research

#### **2.2 Objectives:**

- To achieve and maintain a case detection of at least 70% of new sputum positive TB patients.
- To achieve and maintain a cure rate of at least 85% in such patients RNTCP II is expected to maintain at least 70% case detection rate of new smear positives and maintain a cure rate of at least 85%.

It aims to further increase the access of services to marginalized groups in hard-to-reach areas through continuation of all activities of Phase I and with intensive monitoring, supervision and evaluation. To provide standardized, good-quality service in a patient-friendly environment, the Programme will strengthen inter-



sectoral collaboration, involve medical colleges and conduct need-based, focused and people-centric Information, Education and Communication (IEC) activities.

Expected achievements for RNTCP II (next five years) (Refer Annex II for details)

- Maintain at least 70% case detection rate of new smear positives
- Maintain cure rate of at least 85%
- Increase access of services to marginalized groups and hard to reach areas
- >75 lakhs patients to be registered under DOTS
- Capacity to diagnose and treat MDR-TB cases built
- Improved Access to RNTCP services to PLWHA

### **3. Strategy & Initiatives proposed to maintain quality assured diagnostic and treatment services**

**Objectives 1: To achieve and maintain a case detection of at least 70% of new sputum positive TB patients.**

#### **1. Provision of high quality diagnostic and treatment services - case finding, treatment and case holding**

- Evidence based policies and strategies
- Decentralization of programme to district level
- Integration into general health systems, including NRHM
- Constant engagement with medical professional bodies and pro-active initiatives for successful and sustainable public-private partnerships

#### **2. Improve referral of chest symptomatics from the peripheral health facilities to the nearest diagnostic facility (DMC)**

- To ensure over 80% of the public health staff (MO, MPHS/HA, MPW etc) are trained in RNTCP. Need based retraining would be conducted based on the needs assessment. Provisions for induction training for turn over staff, and update training on new initiatives under the programme have been made.
- Need based and targeted IEC –
  - Communication facilitators to be appointed as per norms in the states to strengthen IEC using locally adaptable IEC tools and methods.
  - Emphasis on interpersonal communication, patient provider meetings and community meetings to improve awareness and community participation – number of such interactive meetings held and activities undertaken to be monitored against the IEC annual action plan proposed.
  - IEC strategy focuses on building awareness, advocating with various stakeholders, beneficiaries and opinion leaders, and encouraging the

involvement and participation of the community and health care providers to the goal of TB control.

**3. Ensure decentralized quality assured diagnostic and treatment services**

- Strengthening of infrastructure: Over 11,800 Designated Microscopy Centres (DMCs) have been upgraded in the primary health care infrastructure. However, with increase in population additional DMCs will be established. Efforts to be continued to involve other sector health facilities fulfilling the RNTCP norms under the lab network.
- Establish Sputum collection centres: To facilitate the transportation of sputum samples from non DMC- PHIs situated in remote areas to DMCs.
- Ensure that trained LT is available at all times and functional BM is made available. Provision has been made under the programme for contractual staff to meet the human resource gap in the states/districts.
- Implementation of quality assurance (QA) protocol to ensure that 3 sputum smear examinations are done for all TB suspects and all TB cases are diagnosed correctly (5%–15% positivity is expected among patients examined for diagnosis).
- Intermediate Reference Laboratories have been strengthened at the state level in 2 states, to support in implementing QA protocol in the state and undertake culture and drug sensitivity testing. 10 more state level IRLs to be established.

**4. HRD related issues**

- Capacity building of state and district programme managers
- Need based retraining planned of all levels of staff
- Continued support by contractual staff to meet the human resource gap in key areas (lab Technicians; sub district supervisory staff – STS/STLS, 2<sup>nd</sup> MO at DTC as per approved norms)

**5. Reducing initial default rate - ensure that all smear-positives in the Laboratory Register are started on treatment and registered in the TB Register.**

- To implement the referral for treatment mechanism in all districts
- To undertake border district meetings in select districts where referrals are high.

**6. Involvement of Medical colleges**

- Establish and maintain diagnostic and treatment facility at all medical colleges
- Seek involvement of all departments of medical colleges through the Medical college core committees, and constantly engaging with the academicians through Task Force Mechanism



## **7. Involvement of other sectors**

- Scaling up of PPM (Public-Private Mix) activities to 70 sites from 14 sites
- To continue to seek involvement of PPs, NGOs and corporate houses in RNTCP (as per the schemes developed for involvement of Private practitioners and NGOs)
- Organize training and sensitization programmes for health staff from other sectors.
- Constantly engage with other ministries/public sector enterprises to seek support for implementation of RNTCP in their health facilities – e.g. Railways, ESI, CGHS, etc.
- Constantly engage with professional associations including Indian Medical Association (IMA) to seek support to disseminate RNTCP strategy among the medical fraternity.

## **8. Implement Tribal action plan to improve access to tribal and other marginalized groups and monitor the performance of tribal districts and socio-economically backward districts.**

- Migrants
  - To have routine mechanisms and strong referral linkage system in order that migrant populations have access to seamless RNTCP services.
- Tribal groups: To have mechanisms that RNTCP services are appropriate, accessible, acceptable and affordable to marginalized groups such as tribals.
  - Provision of additional TB Units and DMCs in tribal/difficult areas
  - Provision of TBHVs for urban areas
  - Compensation for transportation of patient & attendant in tribal areas
  - Higher rate of salary to contractual staff posted in tribal areas
  - Enhanced vehicle maintenance and travel allowance in tribal areas
  - Studies to document utilization by marginalized groups
- Gender
  - To provide gender sensitive approaches to facilitate access and utilization of TB control services by both men and women.

## **9. DOTS-Plus services for MDR TB**

- Introduce diagnostic and treatment services for MDR-TB in a phased manner, starting with Gujarat & Maharashtra in 2006-07
- Internationally recommended DOTS-Plus guidelines will be adopted and followed
  - Accredited quality assured state level reference laboratory for diagnosis of MDR-TB

- Designate a state DOTS-Plus site with adequate indoor facilities and trained staff for MDR-TB treatment
- Establish system for ambulatory daily DOT following discharge from indoor facility (for full 2 years)
- Establish logistics system and standardized MIS
- Undertake procurement of 2<sup>nd</sup> line anti TB drugs for MDR TB
- Undertake procurement of laboratory equipment for strengthening IRLs.

#### **10. TB HIV collaboration:**

ART- DOTS linkages are being established at all the ART centres of the AIDS control programme to ensure optimal access to TB diagnostic and treatment services to the HIV positives at advanced stage of disease. Joint training modules on TB/HIV have been formulated for various categories of staff of RNTCP and NACP and the training activities are being scaled -up. The coordination is being reviewed regularly at the National, State and District level by coordination committees which have participation of key policy makers.

- Strengthen collaboration and cross referrals in 14 states implementing joint TB HIV action plan
- Complete training on TB HIV of all RNTCP (MO, STS, STLS) and NACP staff (Counsellors)

**Objective 2: To achieve and maintain a cure rate of at least 85% in such patients**

#### **1. Improve reach of treatment services**

- DOT centres have been established in majority of the public sector health facilities, and through involvement of NGOs, PPs, AWWs and community volunteers. The programme shall endeavor to further decentralize DOT services so that patient does not have to walk for more than 10-15 minutes for receiving treatment under DOT. Efforts to be made to involve more number of community volunteers, all ASHA workers to be trained as DOT providers. practitioners of ISM and seeking greater cooperation of NGOs, CBOs, self help groups and PPs.

#### **2. Ensure uninterrupted drug supply**

- Drugs are supplied in Patient Wise boxes for adults. Pediatric PWBs are being introduced under the programme
- Train state, and district level staff on drug and logistic management to ensure no stock out situation
- Undertake procurement of 1<sup>st</sup> line anti-TB drugs



### 3. Improve quality of DOT and case holding

- Monitoring, supervision and evaluation: All states are currently implementing the 'Supervision and Monitoring strategy' – detailing guidelines, tools and indicators for monitoring the performance from the PHI level to the national level.
  - To implement the supervision and monitoring strategy of RNTCP
  - Supervisory register be printed and be kept at PHI level. To ensure that the health staff are trained and sensitized to use and maintain the supervisory registers
- Programme reviews – as per S&M guidelines
  - With the State TB officers (STOs) at the national level biannually – in July and December
  - With the district programme officers by the HS/DHS/STO every quarter.
  - With the district staff by the DM/CMO/DTO every month
- To review the performance of the districts and states every quarter
  - To publish the quarterly performance report and the annual performance report of the RNTCP.
    - All reports from the district upwards (to state and centre) are received electronically using Epi centre data management
    - It is planned to upgrade the data management system as part of the TPIS project.
    - The centre provides additional feedbacks to the states and districts on their quarterly performance and monitors the action taken reports.
      - Similarly the state undertakes a district wise and TU wise analysis and provides feedback
      - The districts to undertake DMC wise and PHI wise analysis and monitor the quality of DOTS implementation
- To monitor performance of select poorly performing districts at the national level. States to be encouraged to undertake similar activities for districts and TUs.
  - Internal and external evaluations
  - To organize and participate in the Joint Monitoring Mission of the National programme (undertaken every 3 years, next one planned in Oct 2006)
  - To undertake Central level IE of atleast 2 district per month
  - To monitor and review the findings of the State IE undertaken by the states - 2 districts per quarter
  - WHO consultant network

#### **4. Conduct Operational Research**

- The RNTCP Operational Research agenda has been developed and disseminated. Increased efforts to be made to increase involvement of Medical Colleges through Task Force mechanism to support research in RNTCP
- National level surveys to study the impact of the programme
  - TB prevalence surveys at select sentinel sites to be initiated to study the progress towards MDG
  - Incidence surveys: Undertake the repeat National ARTI survey
  - TB mortality survey: to study the TB mortality rates and assess progress in relation to MDG
  - State level Drug Resistance surveys to monitor the drug resistance patterns in the community
  - KAP/Social Assessment studies to assess the outcome of IEC strategy and reach of RNTCP.

These help us to ascertain the impact of the programme on epidemiology of TB in India and measure progress towards MDGs for TB control

#### **4. Sustainability; Overlapping within or across Health Programmes & Convergence Issues**

The sustainability of all activities of the programme has been ensured through continued financing of the phase II of RNTCP till 2010 which has been approved by the 'Cabinet Committee on Economic Affairs'. The current national strategy envisages establishing and supporting a health care system that would be able to provide quality TB care over the decades while acceding TB control interventions the priority it demands. Since its inception the RNTCP in a phase-wise manner has focused on building capacity at the state and district level for effective implementation of the National TB Control Programme. At the health care delivery level, staff are being trained in DOTS and infrastructural improvement supported so that quality diagnostic facilities are available to all clients. National disease control programmes including RNTCP has been subsumed under the recently launched 'National Rural Health Mission'. Under the umbrella mechanism of NRHM State and District TB control societies have been merged under the State Health Society to bring about convergence of efforts towards health care delivery.

#### **5. Financial resources**

The first phase of the World Bank assisted RNTCP ended on 30 September 2005. The second phase of the project that has commenced on 1<sup>st</sup> October 2005 for a further period of five years is being assisted by the World Bank, and the Department for International Development (DFID). The total project cost is US\$256 million of which the World Bank assistance is US\$170 million and DFID assistance (via WHO) in the form of drugs for 500 million population is US\$63.7 million. In addition, the RNTCP is supported by the Global TB Drug Facility (GDF),



the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) and the United States Agency for International Development (USAID). Danida had provided US\$ 14 million under Phase I to support RNTCP in the State of Orissa. In addition, US\$26 million was provided by DFID to cover the entire State of Andhra Pradesh. The GDF was providing anti-TB drugs for the State of Orissa, and also for an additional 200 million population as a commodity grant valued at over US\$2 million per year up to 2005. The GFATM is providing US\$ 8.6 million to cover a population of 56 million in the three States of Chhattisgarh, Jharkhand and Uttaranchal from the GFATM Round 1, US\$ 29 million to cover a population of 110 million in Bihar and Uttar Pradesh from Round 2, and US\$26 million to cover Andhra Pradesh and Orissa. USAID is providing grant assistance of US\$6.58 million over five years (up to 2007) for covering the entire 21 million population of Haryana. The Government of India provides 100% grants-in-aid to the implementing agencies i.e. States/ UTs besides free drugs. The programme is implemented through the general health infrastructure of the states. The States also provides some manpower resources.

## 6. Budget requirements for XI<sup>th</sup> Plan (2007-2012)

Based on the earlier programme experience and the Project Implementation plan of Phase II of RNTCP, to strengthen the ongoing TB control activities and support new initiatives viz. management of MDR TB using DOTS Plus, strengthening State level laboratory network to undertake culture and sensitivity testing, pediatric patient wise drug boxes, etc, approximately outlay of Rs. 1450.00 crores would be required to implement RNTCP DOTS programme in the entire country during the 11<sup>th</sup> plan period.

The period from 1<sup>st</sup> April 2007 to September 2010 of the 11<sup>th</sup> Plan is covered in the approved Phase II RNTCP. For the remaining period of the 11<sup>th</sup> Plan from October 2010 to March 2012, approval of the Govt. would be required. For achieving the desired epidemiological effect, the Revised National TB Control Programme would be required to be continued for about another 15-20 years.

Year	Budget Outlay (in Lakhs)
2007-08	28600
2008-09	26500
2009-10	27600
2010-11	30000
2011-12	32000
Total	144700

Goals & Achievements of Xth Plan

Indicator	2002		2003		2004		2005		2006		2007	
	Planned	Achieved	Planned	Achieved	Planned	Achieved	Planned	Achieved	Planned	Achieved	Planned	Expected achievement
Coverage under RNTCP (population in Millions)	550	547	650	775	800	947	900	1080	1000	1114	1070	
Number of patients to be examined (Million)	2.08	2.64	2.50	3.96	3.04	3.95	3.42	5.69	3.80	1.56	4.07	
Total number of patients to be put on treatment under RNTCP (Millions)	0.52	0.62	0.61	0.91	0.75	1.19	0.85	1.29	0.94	0.33	1.00	
New Smear positive patients to be put on treatment (Millions)	0.21	0.25	0.24	0.34	0.29	0.47	0.33	0.51	0.37	0.13	0.40	
Success rate in new smear positive patients in RNTCP (%)	83	84	84	86	>85	85	>85	87	>85	86	>85	



Goals & Targets for the XIth Plan

Indicator	Source	2007-08	2008-09	2009-10	2010-11	2011-12
Number of patients to be examined (Million)	National Reporting System Programme	5.93	5.93	5.93	5.93	5.93
Total number of patients to be put on treatment under RNTCP (Millions)	National Reporting System Programme	1.26	1.26	1.26	1.26	1.26
New Smear positive patients to be put on treatment (Millions)	National Reporting System Programme	0.57	0.58	0.59	0.60	0.61
Success rate in new smear positive patients in RNTCP (%)	National Reporting System Programme	≥85%	≥85%	≥85%	≥85%	≥85%

# NATIONAL LEPROSY ERADICATION PROGRAMME

## 1. Background

Govt. of India started National Leprosy Control Programme in 1955 based on Dapsone domiciliary treatment through vertical units implementing survey education and treatment activities. It was only in 1970s that a definite cure was identified in the form of Multi Drug Therapy. The MDT came into wide use from 1982, following the recommendation by the WHO Study Group, Geneva in October 1981. Govt. of India established a high power committee under chairmanship of Dr. M.S. Swaminathan in 1981 for dealing with the problem of leprosy. Based on its recommendations the NLEP was launched in 1983 with the objective to arrest the disease activity in all the known cases of leprosy. However coverage remained limited due to a range of organizational issues and fear of the disease and the associated stigma. At this stage in view of substantial progress achieved with MDT, in 1991 the World Health Assembly resolved to eliminate leprosy at a global level by the year 2000. In order to strengthen the process of elimination in the country, the first World Bank supported project was introduced in 1993.

**The 1<sup>st</sup> Phase of the World Bank supported National Leprosy Elimination Project** started from 1993-94 and completed on 31.3.2000. This Project involved a cost of Rs. 550 crores of which World Bank loan was Rs. 292 crores. During this phase, the prevalence rate reduced from 24/10,000 population in 1992 before starting 1<sup>st</sup> Phase project to 3.7/10,000 by March 2001.

**The 2<sup>nd</sup> Phase of World Bank Project on NLEP** started for a period of 3 years from 2001-02. The project involve a cost of Rs. 249.8 crore including World Bank loan of Rs. 166.35 Crore and WHO to provide MDT drugs free of cost worth Rs. 48.00 crore. The project successfully ended on 31st Dec. 2004.

The National Leprosy Eradication Programme is being continued with Govt. of India funds from January 2005 onwards. Additional support for the programme is continued to be received from the WHO and ILEP organizations. MDT is to be supplied free of cost as of now by NOVARTIS through WHO.

## 2. Objectives

NLEP is a 100% centrally sponsored scheme. The following are the objectives of the programme –

- To continue the efforts to achieve elimination of leprosy through existing MDT services.



- To maintain the gains achieved in each of the States / UTs in which elimination already achieved and to continue the efforts to achieve elimination at district and block level.
- To make quality leprosy services available through general health care system as well as other Private and Public health facilities.

### 3. Targets & Indicators

The practice of fixing target for case detection, treatment and discharge has been discontinued since 2003-04 to prevent recording of non – cases are leprosy cases.

(Figures in'000)

	2002-03		2003-04	2004-05	2005-06
	Targets	Ach.	Ach.	Ach.	Ach.
Case detection	420	476	367	260	161
Case treatment	420	476	367	260	161
Case discharged	548	571	445	377	215

#### 3.1 Financial Targets

Out of 236.00 cr. Allocated Rs. 206.23 cr. (87.4%) has been spent till June 2006.

#### 3.2 Indicators

Under NLEP following indicator are used for monitoring, evaluation and assessing progress of the programme.

- Prevalence Rate (PR)
- Annual New Case Detection Rate (ANCDR)
- Among new cases – proportion of MB cases, Female cases, Child cases, SC & ST cases and grade II deformity cases.

Based on the information received through Monthly Progress Report from various States, these indicators are calculated at national level.

#### 4. Strategies

##### ▪ Decentralization of NLEP

- For decentralization of the programme planning, execution and monitoring alongwith improved financial management **State Leprosy Societies** were formed. Under State Leprosy Societies each state has a State Leprosy Cell headed by State Leprosy Officer. For smooth functioning of the state cells additional support of manpower and equipments were provided either from the Project/ Programme fund or from WHO support. 27 State Leprosy Societies were formed in major states where as no societies were formed in 8 small States /UTs. In states where the National Rural Health Mission has started functioning the erstwhile leprosy society got merged with the State Health Society.
- In each district, a **District Nucleus** with full or part-time District Leprosy Officer, Medical Officer in endemic districts, NMS/ PMW and in some State Health Educator, Physiotherapy technicians was formed. District Leprosy Societies were in position in each district. These societies got merged with District Health Societies in state where the National Rural Health Mission was started.
- One upgraded **Sample Survey cum Assessment Unit (SSAU)** for 27 States were approved, which were attached to the State Leprosy Office. These units with one Epidemiologist and one Data Entry Operator gave useful surveillance support to the programme.
- The **Central Leprosy Division** received additional support of manpower on contract basis from WHO and also under the programme to guide the States/ UTs with technical guidance and financial management support. In addition programme monitoring at central level got a boost during the 10<sup>th</sup> Plan period with the equipments and Data Entry staff provided by WHO.
- The Central Leprosy Teaching and Research Institute, Chengalpattu and 3 Regional Leprosy Teaching and Research Institutes at Raipur, Aska and Gouripur continued to provide support to the programme in training of GHC staff, Management of complicated cases, POD care, RCS and operational research activities.
- In view of acute shortage of vertical staff in their cadre, a few such staff on contract basis were provided to Punjab, Haryana, Delhi, Dadra and Nagar Haveli and Chandigarh UT. These staff were used to form the District Nucleus in these States/ UTs.

##### ▪ Integration of Leprosy Services

- Leprosy services were integrated during the 10<sup>th</sup> Plan period from the vertical system to the General Health Care System. Leprosy Diagnostic and Treatment Services are now available from all the Primary Health Centres and Hospitals in the Rural areas. These services are available on all



working days from the Medical Officers and Pharmacist as against from a leprosy staff earlier on weekly clinic days.

- In urban areas, implementation of urban leprosy control programme was started from the year 2005 in most of the states. The process is on now and will cover all the urban townships. All available health facilities are being involved, coordinated through a nodal agency.
- The multipurpose health workers at village level are involved for providing MDT drugs, case followup, referral & counseling activities.
- In urban areas where Primary Health Care System/ subcentres are not available, some states utilize the services of local NGO workers for case followup, POD care services and counseling in the families of patients.
- Efforts to involve the Private Practitioners was started in 7 states covering 57 districts where training for these Private Practitioners were organized during 2004-05, through the Indian Medical Association. Many of these trained Practitioners have now been involved in the Programme and use MDT for their patients.
- In states where the National Rural Health Mission has been started the village level functionary ASHA is being involved in leprosy work particularly case followup for treatment regularity and referring suspected cases to the subcentre Health Worker.

#### ▪ **Leprosy Training of GHS functionaries**

- 3 days Training to all the District Nucleus staff i.e. Medical Officers, NMS/ PMW and any other staff available have been given during 2005-06.
  - For newly appointed Medical Officers, Health Supervisors, Multi-purpose workers working under the General Health Care Services, three days orientation training were designed and imparted every year.
  - Similar 3 day training for Medical Officers and Health staff of municipality, other non leprosy NGOs, some Private Practitioners were given under the urban leprosy control programme.
  - From the year 2005, 1 day re-orientation training for Medical Officers of the PHCs and Pharmacists has been started.
  - Special training in management of leprosy programme was designed for the District Chief Medical and Health Officers and imparted through the National Institute of Health and Family Welfare (NIH&FW), New Delhi.
  - Capacity Building of the District Hospital Dermatologist/ Medical Specialist were planned and initiated.
  - Training to Private Practitioners in leprosy and for their involvement in the programme activities was taken up by the year 2004 with coordination of the Indian Medical Association.
- **Surveillance for early diagnosis & prompt MDT, through routine and special efforts**
  - **Intensified IEC using Local and Mass Media approaches**



Intensified IEC activities were carried out through Mass Media Agency at central level and through the programme personnel as well as locally hired folk media groups at state level. Doordarshan and AIR were utilized frequently at central and state level. Interpersonal communication (IPC) and Advocacy meetings were organized at various levels.

#### ▪ **Prevention of Deformity & Care**

- General Health Care Medical Officers were taught to diagnose early nerve involvement and management of such cases with adequate counseling to patients on self care.
- POD camps were organized at Block level in which GHC Medical officer and other selected Health staff received one day training with demonstration on POD care services. Leprosy patients also received one day training on self care practices in these camps.
- RCS operations continued to be conducted in 30 GOI recognized institutions managed by NGOs.
- Supply of MCR footwear is being made both from GOI and ILEP institutions to their own patients free of cost.
- ILEP agreed in their MOU with GOI to facilitate RCS operation in 5 Medical Colleges in Bihar, Orissa, Uttar Pradesh, Madhya Pradesh and Jharkhand during the period 2005-07. This has already been completed in Patna Medical College, Bihar and the process is on in the remaining states.

#### **5. Initiatives taken**

During the 10<sup>th</sup> Plan period a number of initiatives were taken to augment the service delivery system. This helped in quick detection of hidden leprosy cases and putting them under treatment. These measures also helped in improving the quality of leprosy services through General Health Care System. These are:-

- The 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> Modified Leprosy Elimination Campaigns were conducted in the years 2001-02, 2002-03 and 2003-04, which helped in detection of 1.4 lakh, 0.92 lakh and 0.58 lakh new cases respectively in short period of time.
- Block Leprosy Awareness Campaigns (BLAC) were carried out first during 2004 in 836 high endemic blocks and during 2005 in 552 blocks in 12 districts.
- Special Action Plan for Elimination of Leprosy (SAPEL) in Rural areas and Leprosy Elimination Campaign (LEC) in urban localities were carried out to cover population group residing in difficult and inaccessible areas, which were not generally covered by the regular programme activities.
- The States/UTs have started the process of developing suitable referral system for difficult to diagnose cases & cases requiring specialized management services.



## 6. Achievements under 10th plan period

- The National Health Policy, Govt. of India had set the goal of elimination of leprosy at national level i.e. to reduce the no. of cases to  $< 1/10,000$  population by the year 2005.

As a result of the hard work and meticulously planned and executed activities, the country achieved the goal of elimination of leprosy as a public health problem, defined as less than 1 case per 10,000 population, at the National Level in the month of December, 2005 where in Prevalence Rate recorded in the country was 0.95/10,000 population. The prevalence rate has come down further to 0.85/10,000 population as on 31<sup>st</sup> May 2006.

- 26 States/UTs have achieved the level of elimination and these are :- Nagaland, Haryana, Meghalaya, Himachal Pradesh, Mizoram, Tripura, Punjab, Sikkim, Jammu & Kashmir, Assam, Manipur, Rajasthan, Kerala, Arunachal Pradesh, Daman & Diu, A&N Islands, Pondicherry, Gujarat, Karnataka, Lakshadweep, Tamil Nadu, Andhra Pradesh, Uttaranchal, Madhya Pradesh, Maharashtra and Goa.
- Decentralization of NLEP from centre to state level completed has been completed in all the States.
- Leprosy services have been integrated with General Health Care System in all States. This has increased to accessibility of the services to the people near or to their home on all working days.
- Annual New Case Detection Rate has started falling only during the plan period.

## 7. Monitoring & Evaluation

- Simplified Information System (SIS) was introduced in 2002 under which simplification of the decade old leprosy programme information system was done, so that the newly involved GHC service personnel can easily adapt to the system of record keeping, validation of records, reporting and monitoring of the programme at PHC/ Hospital, District and State level. This system has drastically improved recording, reporting and its transmission. The programme is monitored routinely at District, State and Central Leprosy Division level through scrutiny of regular monthly reports.
- Leprosy Elimination Monitoring (LEM) exercise were undertaken with WHO support through the NIH&FW, New Delhi, to assess the programme achievement in identified indicators during the year 2002, 2003 and 2004. Immediate actions were initiated on the deficiencies observed.
- An exercise to validate the new leprosy cases was carried out with WHO support through the NIH&FW during 2003 and 2004.
- Operational research activities to study progress of Integrated Leprosy Service delivery through the GHC and on POD care services being provided by GHC were carried out.



- An independent study was carried out through the Indian Institute of Health Management Research, Jaipur in April-May 2005 to see the programme achievement status at the close of the World Bank supported Second National Leprosy Elimination Project.

## 8. Constraints

- With reduction in case load, priority given by States/UTs to the programme gets reduced.
- Removing suitable officers from key posts, keeping posts vacant are great hindrance to the programme.
- In states where Primary Health Care infrastructure is not adequate, providing quality services in all areas is a problem.

## 9. Mid Course Correction

Planning Commission had revised the overall budget of Health Ministry for Xth Five Year Plan. The Xth Plan initial allocation for NLEP was Rs. 255 crores which was later reduced to Rs. 236 crores by Planning Commission.

During Xth Five Year Plan, separate cell came to existence to monitor the NE Region budget under which a separate budget head has been kept for NE region budget.

## 10. Outlay and Expenditure

(in crores)						
S.No.	10th Plan	2002-03	2003-04	2004-05	2005-06	2006-07
1. Allocation	236.00	75.00	54.77	55.00	28.32	42.25
2. Expenditure	206.23	74.97	50.22	42.34	23.46	15.24 (30.6.06)

Out of approved outlay of Rs. 236 crore of 10<sup>th</sup> Plan , a sum of Rs. 206.23 crores have been spent upto 30<sup>th</sup> June 2006. Shortfall in yearly utilization of allocated fund is because of the States / UTs having excess unspent fund in their hands from previous years which have been considered while releasing the grant i.e. mainly in 2004-05 & 2005-06 and only net fund requirement have been released in these years.

## 11. Partnership in NLEP

At the start of the 10<sup>th</sup> plan period, the National Leprosy Eradication Programme in India was supported by a number of partners under the banner of "Global Alliance for Elimination of Leprosy". The partners included the World Health Organization,



The Sasakawa Memorial Health Foundation (SMHF) and The Nippon Foundation (TNF) of Japan, The International Federation of Anti-Leprosy Associations (ILEP), The World Bank, The Danish International Development Agency (DANIDA) and The Novartis Foundation, in addition to the many local NGOs working in the States/ UTs. DANIDA provided support till November 2003. The World Bank supported project ended in December 2004. The SMHF and TNF, Japan continued to provide support with a special package for elimination of leprosy in India w.e.f. 2001 till 2007. All the support provided by WHO viz. provision of the National Consultant, 10 State and Zonal NLEP Coordinators, other manpower support to CLD and States/ UTs, equipments and their maintenance, LEM and validation exercises, operational research and training of District CM&HOs came under this package. The Novartis Foundation is committed to provide free MDT supply to India till 2010 through the WHO. Ten International organizations active in India under the banner of ILEP are presently engaged to provide additional support to NLEP. The present MOU signed between GOI and ILEP is operational till March 2007.

## PART II – PROPOSED XI FIVE-YEAR PLAN

### 1. Key lesson learnt from Xth Plan

- Repeated mass awareness campaign helped in increasing the Public awareness about leprosy, its curability, drug availability in Health Centres, resulting in improved number of self reporting for diagnosis and treatment.
- Stigma associated with the disease in society is gradually diminishing, although a longway to go even now to completely remove same in all part of the country.
- Introduction of a Simplified Information System (SIS) for NLEP suitable for the GHC staff helped in stream ling data generation, reporting and monitoring of the programme.

### 2. Objectives

- Further reduce the leprosy burden in the country.
- Provision of quality leprosy services for all persons through General Health Care System.
- Enhanced Disability Prevention and Medical Rehabilitation (DPMR) services for deformity in leprosy affected persons.
- Enhanced advocacy in order to reduce stigma and stop discrimination against leprosy affected persons and their families.
- Capacity building among Health Service personal in integrated setting both for Rural and Urban areas.
- Strengthen the monitoring and supervision component of the surveillance system.

### 3. Targets and Indicators

The system of setting targets for leprosy case detection, case treatment and discharge of patients is not being followed in the National Leprosy Eradication Programme in India from the year 2003-04 onwards. These targets are no longer of much use after elimination of leprosy as a public health problem at the National level.

The indicators to be used under the programme now to measure the quality of services and outcome expected are as below :-

<u>Indicators</u>	<u>Outcome expected by March 2012</u>
PR < 1/10,000 in States	100%
PR < 1/10,000 in Districts	100%
ANCDR (National) -	< 10/100,000



#### 4. Means of verification

- Regular supervision by District Nucleus and other officers from District, State, Centre level through analysis of routine reports and through filed visits.
- **Independent Evaluation** - It is proposed that there should be a component of Independent Programme evaluation through a hired agency atleast twice during the plan period. Such evaluation may be conducted during the 3<sup>rd</sup> (2009-10) and the 5<sup>th</sup> (2011-12) year of the programme.
- **Review Meetings** - Programme review meetings are to be held periodically at Central, State and District level. At central level, Annual review meeting for the State Leprosy Officers is to be held every year.
  - At state level quarterly review meetings for the District level officers are to be held every year.
  - At district level monthly review meetings are held under the chairmanship of the District Chief Medical and Health Officer in which leprosy component will also be discussed.

#### 5. Strategies & Initiatives

##### ▪ Infrastructure

- State Health Societies to continue in the 27 States viz. Andhra Pradesh, Assam, Arunachal Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Jammu & Kashmir (separate SLS for Jammu division also), Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamilnadu, Tripura, Uttar Pradesh, Uttaranchal and West Bengal. Following categories of staff will be required to be provided to the State Leprosy Cell on contract basis for smooth functioning :-

Budget and Finance Officer cum Admin. Officer – 1  
Admin. Assistant – 1  
Data Entry Operator – 1  
Driver – 1

These staff will be in addition to the regular staff being provided by the states from Non-Plan budget.

- In 8 smaller State/ UTs the HQ District Society will continue to work as the State Leprosy Society. These are Goa, Delhi, Chandigarh UT, A& N Island, Lakshadweep, D&N Haveli, Pondicherry and Daman & Diu. Following categories of staff will be required to be provided to the HQ District Society on contract basis for smooth functioning :-

Admin. Assistant – 1  
Data Entry Operator – 1  
Driver – 1

These staff will be in addition to the regular staff being provided to the District Leprosy Cell by the State/ UT from Non-Plan budget.



In the States where the National Rural Health Mission has been started the State Leprosy Societies will be merged with the State Health Society but accounts will be maintained separately.

- The District Leprosy Societies already formed will function during the 11<sup>th</sup> Plan period, with the existing staff. The District Leprosy Officer either full or part-time and a fully functional District Nucleus will be the basic structure of the DLS. In addition to the regular staff being provided to the District Leprosy Cell following staff on contract basis will be required.

Driver – 1 (where regular drivers are not available).

In the states where the National Rural Health Mission has been started, the District Leprosy Society will be merged with the District Health Society, but accounts will be maintained separately.

- Since most of the states will achieve elimination when the 11<sup>th</sup> Plan starts, the State Leprosy Officers are likely to be holding more than one post. In such a situation, another officer is needed to be in position in the State HQ Cell to assist the State Leprosy Officer. During the 10<sup>th</sup> Plan a Sample Survey cum Assessment Unit was provided to 27 States in which one Epidemiologist and one DEO were provided. Since it is difficult to get Epidemiologist in many of the states, it will be adequate if a Surveillance Medical Officer (SMO) is posted in the 27 major states and in Delhi, Chandigarh and Dadra & Nagar Haveli. The SMO may be a Medical graduate (MBBS) with about 8 years experience in working in any public Health Programme.
- During the 10<sup>th</sup> Plan period a few skeleton leprosy staff was provided to the states of Punjab, Haryana, Delhi, Chandigarh UT and Dadra & Nagar Haveli as they did not have any regular staff to even form the district nucleus. Provision of one NMS per district need to be made for these States/ UTs during the 11<sup>th</sup> Plan period also.
- The Central Leprosy Division was supported with Consultants for Finance, IEC, Training out of programme budget on contract basis during the 10<sup>th</sup> plan period. Need for these staff exist even during the 11<sup>th</sup> plan period to sustain the progress of work satisfactorily. The Training Consultant will also work as DPMR Consultant and will be designated as Training cum DPMR Consultant. In addition provision may be kept for 4 Data Entry Operators and one Driver who were provided by WHO during the 10<sup>th</sup> Plan period.
- The Central Leprosy Teaching and Research Institute (CLTRI), Chengalpattu and 3 Regional Leprosy Teaching and Research Institute (RLTRI) at Raipur, Aska and Gouripur are to continue to provide training and operational research support to the programme during the 11<sup>th</sup> plan period. These Central Govt. Institutions will not involve any cost to the programme under infrastructure.
- The total cost for Infrastructure projected in XIth plan is Rs. 28.66 crores.



## ▪ Integrated Leprosy Services and Special initiatives

- Integrated Leprosy Services through all the Primary Health Care facilities will continue to be provided in the Rural areas.
- All the urban areas will be covered under the urban leprosy control programme integrating services from all the partners available in the area, including the private practitioners.
- Involvement of the Multi-purpose Health functionaries, ASHA in villages and selected NGOs in urban areas are to be engaged for case follow up during treatment to ensure regular MDT collection and consumption, so that all the cases put under treatment gets cured in shortest possible time.
- Emphasis will be laid on providing best quality leprosy services through the GHC system. This means easy availability of services on all working days to all patients, correct diagnosis and adequate counseling to patient and family members, provide MDT to patient whenever approached, regular monitoring of the patient during treatment. Treatment completion by all patients will be desired outcome of the programme.
- The system of referral of difficult cases to the District hospital for diagnosis and management, which has already been started, will be further strengthened with capacity building of persons involved at PHC as well as District Hospital level.
- The laboratory facilities at the District Hospitals for smear examination to diagnose difficult cases will be further strengthened.
- Desegregated data for Female, Schedule Tribe and Schedule Caste patients are to be maintained.
- Regular monitoring and surveillance at National, State, District and Block level will be continued to locate weak areas, so that needed plan for corrective action can be taken in time.

## ▪ Drugs, Material and Supplies

- Free supply of MDT to the leprosy patients is to be maintained during the 11<sup>th</sup> plan as well. M/s. Novartis has agreed to supply the drug free of cost through WHO till end of 2010. For the period January 2011 till March 2012 GOI may have to procure the MDT, if free supply from some donor is not available.
- Material and supplies including supportive drugs are to be procured at district level for use under the programme.
- Total cost for drugs, material & supplies projected under XI<sup>th</sup> plan is Rs. 43.04 crores.

## ▪ Vehicles

- Mobility for man and material is important for running the programme smoothly. Each district should have 2 vehicles in road. The vehicles provided to the districts under NLEP are now very old and many districts do not even have a vehicle. While provision of hiring vehicle was made during the 10<sup>th</sup> plan period, the same are not easily available in the difficult terrain, tribal and unapproachable areas or the cost is much higher than approved budget. There was no purchase of new vehicle from plan budget during 10<sup>th</sup> plan period. Some major states like Maharashtra, Uttar Pradesh, Jharkhand made some purchase of vehicles for districts under the NLEP as replacement of old condemned vehicles, from the cash assistance allotted to these states. Smaller states are however unable to do such replacement from cash assistance as the amount available are much less.

It will be useful for the programme to keep provision for replacement of about 200 vehicles against the 600 district societies. For such purchase special sanction will be obtained from the GOI on case to case basis against condemnation of old vehicles.

In addition provision for hiring of one vehicle/ district where no vehicle is available need also to be kept.

Total cost under vehicles projected during XIth plan is Rs. 22.00 crores.

## ▪ Information, Education and Communication (IEC)

- **Rationale for proposed IEC strategy:** The IEC strategy during the 11<sup>th</sup> plan period is proposed to remain similar to the 10<sup>th</sup> plan period with required changes in approach and contents. Changes are required because
  - Certain level of awareness has developed in the communities due to the persistent efforts in communication during last decade. However continuous efforts are needed to cover the till now uncovered areas. Coverage will have to move from high risk centric to general community at large.
  - With reducing member of leprosy cases in the community, awareness about curability of the disease, lessening number of deformity due to leprosy, stigma associated with the disease has become slightly less. The effective way to deal with this difficult challenge of stigma removal is to embark on intensive inter-personal communication (IPC) with the target groups.
  - For sustaining the anti-leprosy campaign, it is important to integrate leprosy IEC with the IEC of other Health Programmes. This will address the problem of not having technical expertise on communication at various levels of leprosy offices.



- **Objectives of the Communication Plan:** To develop effective communication vis-à-vis the target audiences and take on the task of effectively delivering the same.

- To compliment and support the detection and treatment services being provided through the General Health Care System, making it more acceptable to the population.
- To strive to remove stigma surrounding leprosy and prevent discrimination against leprosy affected persons.
- To specifically cover clients, Health providers, influencers and the masses.

- **IEC Plan for the years 2007-2012**

- **Central Level :** The Central Leprosy Division will draw up annual plan and implement same. Mass media activities at National level will be through Doordarshan channels and AIR. National level press will be used for central level communication.

- **Information Design:**

- Complete curability and non contagious nature of the disease.
- Availability of good quality treatment (with MDT) free of cost from all Govt. Health Centres.
- Rectification of deformities is possible through surgery.
- Leprosy affected person on treatment can live a normal life alongwith the family.

- **State and Peripheral Level :** IEC under NLEP will be decentralized to the States/ UTs who will make their own plan and implement same. Central Leprosy Division will provide broad guidelines with allotted budget to the States/ UTs, who will have the flexibility to allocate cost to districts as per local **Priority areas** and **Target groups** to be attended to :-

- Mass Media – To a limited extent through local centers of TV, Radio and press in local languages.
- Outdoor Media - Hoardings, Bus panels, Wall paintings, posters.
- Rallies including Banners.
- Rural Media - IPC group meetings, School IEC, Folk media,
- Exhibitions and Health Melas.
- Advocacy - Meetings with Zila Parishad, Mahila Mandals, NGOs, etc.
- Interpersonal Communication (IPC) through the Health staff involving communities, Panchayat leaders and NGO through advocacy workshop will remain the focused approach.

## 6. **Priority Areas:**

- States with low literacy rates in general and female literacy rates in particular.
- Tribal population majority areas in State/ UTs

- Endemicity of districts (PR > 2/10,000) in the first 2 years of plan.
- Urban areas with problem of migratory population.

## 7. Target groups:

- Women from the areas where literacy rate is low.
- School children
- Population groups residing in remote inaccessible areas and tribal population.
- Migratory population.
- People living in urban slums.

## 8. Budget and Norms

Norms for calculating the funds required in the states for the first 2 years has been drawn up on the basis of endemicity of districts. Funds will be released by GOI to the states, which in turn will allocate fund to the districts. While allocating funds the states will keep in view the priority areas and target groups in each district. For the next 3 years when endemicity level in all districts should be almost similar, Central Leprosy Division will work out a norm on the basis of population in the state. The state in turn will allocate fund to the districts on the basis of their endemicity and priority areas. Otherwise by that time it is presumed that IEC activities should be more general in nature covering all areas in the country.

Total cost under IEC projected during XI plan is Rs. 65.79 crores.

## 9. Training and Capacity building

- Training has to remain a continuous process during the 11th plan period as well. Although the country has achieved elimination of leprosy as a public health problem, yet there are quite a few districts and Block areas that have high endemicity of leprosy. Further, due to huge turnover of Medical Officers in the major states the staff in the Primary Health Centres keep changing every year. In a number of states, Medical Officers on contractual basis works in the PHC, where the turn over is very high. The new entrants are needed to be trained regularly, so that the services to be provided to the people from the GHC system do not suffer. Induction technical & IEC training of 3 days duration will therefore be continued every year. This training can be jointly done with the integrated training programme under the National Rural Health Mission.
- Similar 3 days technical & IEC training in leprosy will be required for Medical Officers working in the urban areas both under Govt. and other Non-Governmental institutions regularly.
- In addition to the above mentioned new entrants, remaining Medical Officers under GHC also will require 1 day re-orientation training which can be organized in batches every alternate year. This re-orientation is required firstly to keep the diagnostic and management skill upto date, in view of low number of cases in the community. This should help in improving the quality of services



- provided by the PHCs. Secondly they should also be able to refer the difficult to diagnose cases to the referral centers i.e. District Hospitals at the earliest.
- Induction training for new entrants of Health Supervisors (M & F) and Health Workers (M & F) for 3 days duration will also be required to be carried out regularly every year. This training can again be part of the integrated training programme under the National Rural Health Mission.
  - Smear examination to detect the *Mycobacterium Leprae* is one of important requirement for diagnosis of otherwise difficult to diagnose cases. Now that the district hospitals are being updated as referral centre for such cases for diagnosis and management, the laboratory technicians working in these hospitals need to be given some short of specialized re-orientation training under the programme. At least 2 of the lab technicians from the district hospital laboratory are proposed to be trained. These trainings for 5 days duration each will be completed during the 1<sup>st</sup> and 2<sup>nd</sup> year of the plan period.
  - Total cost under training projected during XIth plan is Rs. 3.36 crores.

## 10. Disability Prevention and Medical Rehabilitation (DPMR)

During the 11<sup>th</sup> five year plan, it is proposed to give more emphasis on the Disability Prevention and RCS services for the leprosy patients than in the previous plan. Although the number of visible deformity in leprosy affected persons has reduced substantially yet quite a backlog exist for specialized care to remove their deformity. Such efforts also will help in regaining the status of the leprosy affected in public mind thereby reducing the stigma to the disease.

### 10.1 Prevention of Disability:

- All Health Workers will suspect cases of leprosy reaction, relapse, insensitive hands and feet and refer to PHC for diagnosis. They will also empower patients with self care procedure for prevention of deformity.
- All PHC Medical Officers will diagnose cases of reaction and treat them. Severe reaction cases will be referred to the District Hospital, if not responded well within 2 weeks of starting treatment.
- Service and care for impairment such as ulcers, cracks and wounds, septic hand or feet etc. will be available from all the Health Institutions routinely. Complicated ulcer cases will be referred to District Hospital.
- Microcellular Rubber (MCR) footwear are to be supplied to all needy patients by the District nucleus staff at the concerned Health institution. An appropriate system of need assessment, procurement and supply will be drawn up by the State/ UTs, under guidance from the training cum POD consultant in the Central Leprosy Division.
- PHCs will provide follow up treatment to all patients referred back by the secondary and tertiary level units for reaction, complication or post surgery care.



## 10.2 Medical Rehabilitation Services for the Deformed

- All patients with grade II deformity diagnosed at the PHC will be referred to the District Hospital/ District nucleus for further assessment and care. Treatment with MDT for the required duration will however be continued in the PHC. Cases suitable for RCS will be referred by District Hospital to the tertiary level care hospital for further care.
- RCS operations being carried out in 33 ILEP supported institutions will continue to provide services to the leprosy deformed persons, on their own on patients referred by the General Health Service System.
- RCS operations being carried out in the 2 Central Govt. Leprosy teaching and research centers and in JALMA (ICMR) at Agra will continue to provide the service.
- 7 Medical colleges where ILEP is engaged for capacity building and facilitating RCS operations will be performing such operations during the 11<sup>th</sup> plan. Provision of about Rs. 5000/- per major operation performed in these institutions towards logistic support will be very encouraging. It is expected that each Medical College can perform about 20 cases per year.
- There are about 41 Physical Medicine and Rehabilitation Centres in different Medical Colleges of the country. These institute have the facility for conducting RCS and can be involved for services to leprosy patients as well. Strengthening of these institute with logistic support initially and then @ Rs. 5000/- per major operation performed is to be kept for this purpose.
- Some patients are unable to go for RCS operations outside their own district due to financial difficulties, although the operation itself is free of cost. For such patient, it is proposed to keep some fund available to cover their journey and miscellaneous expenditures. An amount of Rs. 6000/- per patient for RCS is kept for those patients referred by the General Health Care System through the District Leprosy Societies.
- Aids and appliances for Medical Rehabilitation will be supplied to the patients. It is proposed to give higher priority to this important aspect of the leprosy case management and care. Institutions for providing services are also planned to be increased in number for the benefit of the patient and to cut down on the backlog. The budget need to implement the Disability Prevention and Medical Rehabilitation Plan during the 11<sup>th</sup> plan period is therefore likely to go higher. Total cost under DPMR projected during XI Plan is Rs. 12.30 crores.

## 11. Urban Leprosy Control

- As the country has achieved leprosy elimination at National level and also in nearly 80% of the districts, leprosy cases in the rural areas has gradually gone down. More number of leprosy cases are now prevalent in the urban localities where the people migrate for their livelihood. Problem of detection of all the cases and thereafter particularly completion of treatment in all those that have been diagnosed and brought under treatment is really very big in urban situations. The NLEP urban control plan has to be completed in all the cities



and towns and a strong service delivery system from all Govt. and Non-Governmental institutions has to be put in place. Support under the urban leprosy control plan is needed for –

- Training of Medical Officers working in all Govt. and Non-Govt. institutions providing leprosy services. This is covered under training component 7.6.
- Supportive Medicine – This will be in addition to the provision available under component 7.3. for the District Society.
- MDT delivery services and follow up of under treatment patient.
- Monitoring, supervision and coordination by the nodal agency which includes periodic meeting and mobility.
- IEC activities – This is part of the overall IEC plan for the district and funded accordingly.

#### Number of urban areas identified for support

Sl No.	Type of urban area	Number	Located in State/ UT *
1	Township	354	28
2	Medium Cities – I	55	19
3	Medium Cities – II	5	5
4	Mega Cities	8	7
<b>Total</b>		<b>422</b>	<b>28</b>

- No urban area identified in Arunachal Pradesh, Goa, Sikkim, UT Chandigarh, Dadra & Nagar Haveli, Daman & Diu and Lakshadweep.
- Total cost under Urban Leprosy Control projected during XIth Plan is Rs. 12.03 crores.

#### ▪ NGO Services

- **SET Scheme:** The Modified SET Scheme was revised with effect from 1<sup>st</sup> April 2004. The scheme now covers about 40 NGOs/ NGO Hospitals working for the benefit of the leprosy affected persons. The scheme need to be continued during the 11<sup>th</sup> plan also.
- **Programme need of NGO support:** Under the SET Scheme, the NGOs are presently involved for disability prevention and ulcer care, IEC, referral of suspected cases, referral for RCS, Research and Rehabilitation. As the number of cases have gone down dramatically the NGO support can now be extended to ensure follow up of the under treatment cases particularly in urban locations and in difficult to access areas. Such follow up has become necessary because

nearly 10% of the patient diagnosed do not take the treatment regularly and often had to be deleted otherwise. For a quality leprosy service one has to ensure that each and every patient complete the treatment in the fixed time. The NGO's can support the Hospitals/ PHCs in this important activity.

- As is the practice now, proposals from NGOs for working in a specific area for NLEP will be submitted to the concerned District Leprosy Officer, who will recommend the suitable one to the State Leprosy Officer. The State Leprosy Society will examine the proposal and give approval. Once approved the NGO will receive fund from the State Leprosy Society. The State Leprosy Society will monitor the activities and continue to support the NGO in the subsequent years based on their satisfactory performance. Govt. of India will provide required funds to the SLS for this purpose based on the State Annual Action Plan.
- The International Federation of Anti-Leprosy Associations (ILEP) also support nearly 130 NGOs/ Hospitals on their own and will continue to support such organizations as per State Govt.'s need.
- Total cost under NGO services projected under XIth Plan is Rs. 12.50 crores.

#### ▪ Operational Research

- **Priority Topics:** The overall objective of operational studies/ research is to identify the specific problems in the programme implementation so that measures can be initiated to rectify the defects and improve upon the situation. Certain priority topics were



## ▪ **Supervision, Monitoring and Review**

- **Supervision and Travel cost:** The programme will mainly provide services through the General Health Service infrastructure with supervisory support from the District nucleus staff. Supervisory and visits for other activities will be made by the State level officers as well. While regular State Govt. staff will be drawing their TA/DA from the source of their salary, contract staff like surveillance Medical Officer, BFO and drivers will have to be paid from the programme budget. In addition, NMS posted to the special category of states will also have to be paid TA/DA from programme budget. Similarly travel will have to be made by the consultants from the Central Leprosy Division to various states.
- **Programme Monitoring:** It is proposed that there should be a component of Independent Programme evaluation through a hired agency atleast twice during the plan period. Such evaluation may be conducted during the 3<sup>rd</sup> (2009-10) and the 5<sup>th</sup> (2011-12) year of the programme.
- **Review Meetings:** Programme review meetings are to be held periodically at Central, State and District level. At central level, Annual review meeting for the State Leprosy Officers is to be held every year.
  - At state level quarterly review meetings for the District level officers are to be held every year.
  - At district level monthly review meetings are held under the chairmanship of the District Chief Medical and Health Officer in which leprosy component will also be discussed.

Total cost under Supervision, Monitoring and Review during XIth plan is Rs. 7.63 crores.

## ▪ **Office Operation and Maintenance**

Total cost under Office Operation and Maintenance during XIth plan is Rs. 50.41 crores.

## ▪ **Additional Support to NLEP**

- **World Health Organization (WHO)**
- **MDT:** WHO has already intimated that the support of providing MDT BCPs for treatment of all leprosy patients in the country will continue with funds from donor NOVARTIS till end of the year 2010.
- **Special Package for NLEP:** The support being provided by WHO with funds provided by the Sasakawa Memorial Health Foundation and The Nippon Foundation, Japan is to continue till December 2007. The support covers – Manpower and Equipment maintenance support to the CLD and 36 State/ UT leprosy cell, supervisory

support with provision of Coordinators/ Consultant in endemic states, review meetings, operational research etc.

- **International Federation of Anti-leprosy Association (ILEP):** The ten members organization working as Partners in NLEP in India under the banner of International Federation of Anti-Leprosy Associations (ILEP) is willing to continue their support further. Details of areas for their work is to be finalized and a fresh MOU to be drawn up between the GOI and the ILEP.

## 12. Modalities to improve efficiency and quality of services

- Regular Supervision by District Nucleus to all Health Centres and on the spot corrective action wherever needed.
- System of case validation for correctness of diagnosis and assessment of cure rate for completion of treatment.
- Fully operational system of referral of difficult to diagnose and complicated cases for management to the District Hospital and Tertiary level centres.
- Adequate stock of MDT supply to each Health facilities for free supply to patients.
- Monitoring and Technical support at peripheral level from the partners in NLEP i.e. WHO and ILEP for some more time period.

## 13. Budget Expenditure

(Rupees in Crores)

Source	Year-wise Budget					Total Budget
	2007-08	2008-09	2009-10	2010-11	2011-12	
GOI	51.40	50.00	43.02	41.92	42.42	228.76
EAC	8.08	7.08	6.08	5.08	4.12	30.44
Total	59.48	57.08	49.10	47.00	46.54	259.20



# 14. Estimated Budget (2007-2012)

## Component and Item-wise Cost Projected for 5 Years of 11th Plan

(April 2007 to March 2012)

Sl. No.	Component	Item	Year-wise Cost					Total Cost	Component-wise cost
			2007-08	2008-09	2009-10	2010-11	2011-12		
1	Infrastructure	Staff for State Society	20664	20664	20664	20664	20664	103320	286590
		Staff for District Society	32400	32400	32400	32400	32400	162000	
		Skeleton staff for 5 State/ UT	3168	3168	3168	3168	3168	15840	
		Staff for Central Leprosy Div.	1086	1086	1086	1086	1086	5430	
2	Drugs, Material & Supplies	Multi-drug Therapy (MDT)	80800	70800	60800	50800	41200	304400	430400
		Material & Supplies	25200	25200	25200	25200	25200	126000	
3	Vehicles	Procurement of Vehicle	60000	60000	-	-	-	120000	220000
		Hiring of Vehicle	20000	20000	20000	20000	20000	100000	
4	IEC	Central level	30000	30000	30000	30000	30000	150000	657930
		State & Peripheral level	119598	108660	99495	90089	90088	507930	
5	Training	Training 3 days (Rural & Urban)	3863	3863	3863	3863	3863	19315	33549
		Re-orientation for MO - 1 day	3434	3434	-	3434	3434	13736	
		Lab Technician - 5 days	249	249	-	-	-	498	
6	Disability Prevention & Medical Rehabilitation	Prevention of disability	13200	13200	13200	13200	13200	66000	123050
		Medical Rehabilitation Services	11000	11000	11000	11000	11000	55000	
		Logistic support to PMR instt.	2050	-	-	-	-	2050	
		Supportive drugs etc.	3798	3798	3798	3798	3798	18990	
7	Urban Leprosy Control	MDT Services & case followup	9706	9706	9706	9706	9706	48530	120270
		Monitoring & coordination	10550	10550	10550	10550	10550	52750	
8	NGO Services	SET Scheme	25000	25000	25000	25000	25000	125000	125000
9	Operational Research	Study on 7 topics	5000	4000	2000	2000	2000	15000	15000
10	Supervision, Monitoring and Review	Review meeting	1620	1620	1620	1620	1620	8100	76250
		Independent programme evaluation	-	-	5000	-	5000	10000	

		Travel expenses	11630	11630	11630	11630	11630	11630	58150	
11	Office Operation & Maintenance	Office expenditure	14520	14520	14520	14520	14520	14520	72600	
		Consumables	10130	10130	10130	10130	10130	10130	50650	504100
		POL & Vehicle maintenance	76170	76170	76170	76170	76170	76170	380850	
			594836	570848	491000	470028	465427	2592139	2592139	
Total										



# NATIONAL AIDS CONTROL PROGRAMME

## 1. Review of the status of National AIDS Control Programme during 10<sup>th</sup> Five Year Plan period (2002-2007)

The number of people living with HIV/AIDS (PLHA) in India is estimated to be 5.206 million, the second largest in the world. Over the years the virus has moved from urban to rural and from high risk to general population in all the states and Union Territories (UTs), increasingly affecting women and the youth. The main transmission route continues to be heterosexual (86%). Since 1986, the Government of India has been responding to the challenge through preventive awareness, targeted interventions and care and support programmes. Its planned initiatives so far include the Medium Term Plan (1990-92), the first five-year strategic plan (NACP – I, 1992-99) and the second five-year strategic plan (NACP – II, 1999-2006).

The changing face of the epidemic has induced concurrent change in the strategies of NACP. Over the years the focus has shifted from awareness raising to behaviour change, from a national response to a decentralized response implemented by the states and a growing recognition of the importance of engaging NGOs, Community based organisations (CBOs) and networks of people living with HIV/AIDS. The National AIDS Prevention and Control Policy and the National Council on AIDS (NCA) chaired by the Prime Minister provide policy guidelines and political leadership to the response. The HIV sentinel surveillance data for the last three years suggest that the initiatives and interventions spearheaded by the National AIDS Control Organisation (NACO) and the State AIDS Control Societies (SACs) in collaboration with bilateral partners and stakeholders have started showing results with signs of stabilization in some parts of the country.

During NACP II, a number of policy initiatives were taken. These include: adoption of the National AIDS Prevention and Control Policy (2002), National Blood Policy, a strategy for Greater Involvement of People with HIV/AIDS (GIPA), launching of the National Rural Health Mission, National Adolescent Education Programme, provision of anti-retroviral treatment (ART), formation of the inter-ministerial group for mainstreaming and constitution of the National Council on AIDS chaired by the Prime Minister.

## 2. Lessons Learnt

While there has been a systematic improvement in the response there are still areas that require greater attention and stronger focus. The lessons that have emerged from the implementation of NACP II include the following:



- The complexities of the epidemic and its exact dimensions are yet to be understood especially in the Northern and North Eastern states of the country.
- Frequent changes of Project Directors of State AIDS Control Societies (SACS) and other senior programme managers at the state level weakened the thrust and focus of interventions. In some highly vulnerable States, PDs either were saddled with additional non-HIV responsibilities or given SACS charge as additional responsibility. A large number of functional positions in the SACS remained vacant. These factors contributed to an uneven implementation of the programme. A policy safeguard against this trend is felt necessary.
- Decentralisation and devolution of decision-making powers to the SACS was a right step; but without commensurate capacity development and technical support, this did not produce desired results.
- Focused attention on the HRGs through TIs proved to be an effective strategy for preventing the spread of infection. However, saturation of coverage of HRGs nationwide is yet to be accomplished. There were a few States where targeted interventions were not accorded the priority they deserved. Interventions on MSM and IDU remained low. Out of school and unschooled youth, married adolescents and rural population did not get due attention.
- Condom promotion and procurement registered an improvement in 2005 but remained below the targets, emphasizing the need for more aggressive Social Marketing.
- Barring some exceptions participation of the private sector and mainstream civil society organizations was limited.
- The potential of 21 million youth volunteers in NSS, NCC, Scouts and Guides and NYKS Youth Clubs and Youth Red Cross and Red Crescent remained underutilized both in prevention and building an enabling environment.
- Convergence between RCH and NACP remained a difficult challenge.
- AIDS mortality and under reporting are issues that deserve more attention as these have a bearing on the interpretation of sero-surveillance data. This requires careful examination of available methodologies and choice of the best available method suited for the Indian context. Similarly, about 86% of transmission being sexual, it would be necessary to find out how much of this is caused by limited access to services to women. Similarly, it would be necessary to ascertain to what extent this is accounted for by men having sex with men (MSM). Under NACP III, sentinel surveillance will cover all the districts making results more representative.
- During NACP II, a number of regional and national level studies, assessments, surveys and laboratory research have been conducted. Both operational and biomedical data compiled by UNAIDS and other agencies reveal as many as five hundred research documents/papers in addition to the BSS 2001. Management and utilization of this large body of knowledge for improving programme strategy, planning and monitoring remains a challenge. The existing research wing within NACO needs to be strengthened to deal with the emerging need for knowledge management.
- Notwithstanding a significant step-up of the overall resource availability for HIV/AIDS programme, India's per capita financial investment on HIV



prevention and control, care and support remains one of the lowest in the world. To scale up activities and interventions in prevention, care and to meet the demand on treatment, a much higher level of investment is required.

### **3. Key achievements**

At the operational level, NGOs were involved in the implementation of 1033 Targeted Interventions (TIs) among HRGs; 875 Voluntary Counselling and Testing Centres (VCTCs) and 679 STD clinics were established at the district level. Nation-wide and state level Behaviour Sentinel Surveillance (BSS) surveys were conducted. The Prevention of Parent to Child Transmission (PPTCT) programme was expanded across the states. Introduction of a Computerized Management Information System (CMIS) and a Computerized Project Financial Management System (CPFMS) were the other highlights of NACP-II. In addition, a wide range of organizations and networks were also strengthened during this process and the support from bilateral, multilateral and other partner agencies also increased substantially. As a result of all these efforts, the HIV prevalence as indicated by recent studies and analyses is stabilizing and states like Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra and Nagaland have started showing declining trends (Rajesh Kumar et al 2006). The sentinel surveillance results of 2005 also reinforce the stabilization trends indicating that the expected outcomes of NACP-II have broadly been accomplished.

The successful strategies of NACP II that have yielded significant positive results have been strengthened in NACP III and the gaps addressed based on the lessons learnt.

### **Proposed XI Five Year Plan**

The overall goal of NACP III is to halt and reverse the epidemic in India over the next 5 years by integrating programmes for prevention, care, support and treatment. This will be achieved through four strategic objectives namely:

- Prevention of new infections in high risk groups and general population through:
  - Saturation of coverage of high risk groups with targeted interventions (TIs)
  - Scaled up interventions in the general population
- Increasing the proportion of people living with HIV/AIDS who receive care, support and treatment.
- Strengthening the infrastructure, systems and human resources in prevention, care, support and treatment programmes at the district, state and national levels.
- Strengthening a nation-wide strategic information management system.



The specific objective is to reduce new infections as estimated in year 1 of the programme by:

- Sixty percent (60%) in high prevalence states so as to obtain the reversal of the epidemic; and
- Forty percent (40%) in the vulnerable states so as to stabilize the epidemic.

The goal, objectives and strategies have been informed by a set of guiding principles that include the Three Ones, equity, legal, ethical and human rights, PLHA and civil society participation etc. The programme priorities and thrust areas include integration of prevention with care, support and treatment. HRGs, and among them MSM and IDUs would receive priority attention. Gender and age specific strategies will be followed to address specific needs of women, youth and adolescents, migrants and mobile populations etc. National, state and district plans will be evidence based and subjected to sound monitoring and evaluation mechanism. Service delivery will be improved and up-scaled. Capacities will be strengthened at all levels. Mainstreaming and partnerships will be a key approach to facilitate multi-sectoral response engaging a wide range of stakeholders including the private sector, civil society, PLHA networks and line ministries.

The programme strategies of NACP III include preventive interventions for HRGs (TI) and other vulnerable populations i.e. truckers, migrants, prison inmates, youth/adolescents, vulnerable children and sexually active women and men. It has been planned to set up 2100 TI sites to cover 80% of HRGs through STI services, condoms, BCC and enabling environment. The programme envisages covering 95% of young people by 2011 through collaboration with the ministries of Youth Affairs, Human Resource Development (HRD), Women and Child Development (W&CD) and Ministry of Social Justice and Empowerment (MSJE), among others, volunteer networks and youth friendly information centres. A package of services is proposed for the high risk groups and other vulnerable populations. This will include a range of preventive services i.e. treatment of STIs, condom promotion, integrated counselling and testing, prevention of parent to child transmission (PPTCT), supply of safe blood and infection control.

Care, support and treatment services will include management of opportunistic infections including control of TB in PLHA, anti-retroviral treatment (ART), safety measures, positive prevention and impact mitigation. By 2011, the programme targets to treat 3.2 lakhs OI episodes provide TB referrals to 28 lakhs PLHA, cover 2 lakhs PLHA for ART in the public sector, including 0.39 lakhs children.

A differential package has been developed for four categories of districts i.e. Category A – high prevalence, Category B – concentrated epidemic, Category C – increased presence of vulnerable population and Category D – low/unknown vulnerability. Through Integrated Counseling and Testing Centres (ICTCs) 12 million tests per year targeting HRGs and other vulnerable populations is planned.



Condom use is expected to be enhanced to 3.5 billion condoms per annum through communication and social mobilisation.

In recognition of a wider ownership of the response the programme lays stress on mainstreaming HIV/AIDS into the on-going and outreach work of govt., non-government organizations, public and private sector and civil society organizations. Public private partnership will be strengthened to improve service delivery, particularly in areas of ART and STI. Convergence with the Reproductive and Child Health (RCH) Programme, Revised National Tuberculosis Control Programme (RNTCP), the National Rural Health Mission (NRHM) and other programmes of the Ministry of Health and Family Welfare (MoHFW) is being proposed.

In order to promote an enabling environment NACP III will encourage a review and reform of structural constraints, legal procedures and policies that impede interventions aimed at marginalized populations. It will promote greater involvement of people living with HIV/AIDS (GIPA) and facilitate establishment of PLHA networks and civil society forums in each district by 2010. Stigma and discrimination issues will be addressed through action research, advocacy, capacity development, partnership building and linkages with national and state human rights commissions.

Institutional arrangements and capacities will be strengthened to implement various components of the programmes. Towards this goal, District AIDS Prevention and Control Units (DAPCUs) will be established for the first time in the country. The functions and personnel of NACO will be classified into the following: Public Health, Social, Planning, Coordination and Administration, Strategic Information Management, Finance and Procurement. The structure of SACS will similarly be modified and strengthened. Functions of SACS will be categorized into five groups: (i) Medical and public health services, (ii) Communication and social sector services, (iii) Policy, management and cross cutting issues and (iv) Strategic information management, (v) Administration and Finance. To address special vulnerabilities of the North-Eastern States, a Regional AIDS Control Unit (RACU) will be established as a sub-office of NACO but embedded in the governance structure of NRHM. NACP III has also developed an HRD plan to continuously update and improve the competency and skills of the programme personnel.

The existing CMIS will be revamped to address gaps and support decentralization to the district level. A Strategic Information Management Systems (SIMS) unit will be set up at national and state levels to address issues relating to planning, monitoring, evaluation, surveillance and research. The allocation of funds for SIMS will be about 5% of the total budget. The proposed surveillance system will focus on tracking the epidemic, identifying pockets of infection and estimating the burden of infection. Two types of Behavioural Surveillance Survey (BSS) will be conducted: (a) for annual risk assessment at the district level and (b)



methodologically rigorous BSS at national/state level once in three years. A Multi-disciplinary Advisory Committee will be constituted to implement and guide the research agenda to be monitored by the research division at NACO. Regional centres of excellence will be identified to provide the needed technical support while Technical Support Units (TSUs) will be expanded to cover all the states.

### **Program Priorities and Thrust Areas**

NACP III seeks to learn from the lessons of the previous two phases of programme implementation and build on the strengths thereof. Its priorities and thrust areas have been drawn up accordingly and include the following:

- Considering that more than 99% of the population in the country is free from infection, NACP III will place the highest priority on preventive efforts while, at the same time, seeking to integrate prevention with care, support and treatment.
- The sub-populations that have the highest risk of exposure to HIV will receive the highest priority for intervention. These will be sex workers, men who have sex with men, and injecting drug users. Of lower priority, but at a higher level than the general population, will be those groups with high levels of exposure to the risk of HIV infection such as long distance truckers, prisoners, migrants (including refugees) and street children.
- Those in the general population who have greater need for accessing prevention services such as treatment of STIs, voluntary counselling and testing and condoms will be next in the line of priority.
- NACP III will provide all persons who need treatment with access to prophylaxis and management of opportunistic infections. Persons who need access to ART will also be assured first line ARV drugs.
- The prevention needs of children will be addressed through universal provision of PPTCT services. Children who are infected will be assured access to paediatric ART.
- NACP will also make efforts to address the needs of persons infected and affected by HIV, especially children. This will be done through the sectors and agencies involved in child protection and welfare. Impact of HIV on others will also be mitigated through other welfare agencies providing nutritional support, opportunities for income generation and other welfare services.
- NACP III will invest in community care centres to provide psycho-social support, outreach services, referrals and palliative care.
- Socio-economic determinants that make a person vulnerable also increase the risk of his/her being exposed to HIV. NACP will work with other agencies involved in vulnerability reduction such as women's groups, youth groups, trade unions etc. to integrate HIV prevention into their activities.
- Mainstreaming and partnerships will be a key approach to facilitate a multi-sectoral response engaging a wide range of stakeholders. The private sector, civil society organizations, PLHA networks and government departments would play crucial roles in prevention, care, support, treatment and service delivery.



The technical and financial resources of the development partners will be leveraged to achieve the objectives of the programme.

- The geographic spread of the epidemic across the country highlights the urgent need for decentralized planning and implementation. This would be achieved by strengthening the existing process of planning and programme implementation in the states and taking it down to the districts. In order to facilitate organizational restructuring of the SACS, states and UTs have been classified into 4 categories (Refer to sub-section 5.1 on institutional framework).
- Based on the surveillance data, NACO has classified the states into 4 categories as given in section 2. Since in NACP III the basic unit of implementation is the district, the 611 districts in the country have been classified based on epidemiological and vulnerability criteria as follows:

In order to meet the goal and programme objectives of NACP III during the 11<sup>th</sup> Five Year Plan (2007-2012), a financial requirement plan has been worked out. The overall budget for the programme (5 years) is Rs. 11,585 crores. The objective-wise proposed outlays are as under. The details of the physical targets and the financial targets year-wise for each component of the programme are at annexure I and II.

Programme Component	Amount (Rs. in crores)	Percent
Prevention	7786	67.2
Care, support and treatment	1953	16.9
Capacity strengthening	622	5.4
Strategic Information Management	360	3.1
Managing Programme Implementation and Contracts	576	5.0
<b>Total</b>	<b>11585</b>	<b>100</b>

# ANNEXURE - I

## Year-wise physical targets for various components of NACP during the 11<sup>th</sup> Five Year Plan (2007-12)

	Description of targets	Program estimates	Program Targets (units)	Year-end Targets							
				2005	2006	Y1	Y2	Y3	Y4	Y5	
1-A	<b>Prevention Package in High Risk Population</b>										
1	Number of sex workers and their clients reached by intervention per year	1.25 million	1 million	0.44	0.55	0.65	0.80	1.00	1.00	1.00	1.00
2	Number of MSM reached by intervention per year	2.352 million	1.15 million	0.12	0.46	0.69	0.92	1.15	1.15	1.15	1.15
3	Number of IDU accessing Needle exchange	0.23 million	0.19 million	0.087	0.114	0.133	0.152	0.19	0.19	0.19	0.19
4	Number of TI for CSW, MSM, IDUs		2100	691	700	1300	1800	2100	2100	2100	2100
	<b>Prevention package for Bridge Population</b>										
5	Number of Truckers reached by intervention per year	3 million	3 million	1.5	1.8	2.1	2.4	3.00	3.00	3.00	3.00
6	Number of migrants covered through Migrant support programs	314 million	150 million	15	22.5	30	37.5	45	60	50	50
1-B	<b>Prevention in General Population</b>										
7	Rural population-(15-45 Yrs) reached through mass media and local activities		280 million	154	168	196	224	252	280	280	280
8	Number of schools with Adolescent Education Program	144409	144409	72205	86645	101086	115527	129968	144409	100	100
9	Number of students covered under Adolescent Education Program		25 million	8	10	12.5	15	17.5	17.5	70	70
10	Number-of-non-student youth reached		70 million	3.5	7	7	10.5	10.5	14	20	20
	<b>Condom Promotion</b>										
11	Number of condom distributed		3500million/Y ear	1050	1400	1750	2450	2800	3150	100	100
12	Number condoms distributed by social marketing programs		2000million /Year	600	600	700	800	900	1000	1200	1200
	Number of sex acts by HRG in which condoms are		1200 million	600	660	720	840	960	1080	1080	1080



	used		/Year 1000 million /Year	100	300	500	700	800	900	1000
	Number of SM condoms utilized in TI									
13	Number of Commercial condoms		500 million/Year	150	275	300	325	350	350	350
14	Number of free condoms		1000million/Y ear	~ 500	450	400	350	300	280	280
	<b>Improving STI management</b>									
15	Number of adults with STI symptoms accessing syndromic management		30 million	1	5	10	15	20	25	30
16	Number of STI accessing laboratory services		2 million	0.1	0.6	0.8	1.0	1.4	1.6	2.0
	<b>Voluntary Counselling and testing</b>									
17	Number of vulnerable population and clients of sex workers accessing VCT services		7 million/year	0.4	0.8	3	4	6	6.5	7
	<b>Blood safety measures</b>									
18	Number of units of blood for transfusion		10 million							
19	Number of Blood Component Separation Units established (Cumulative)		162 Units	82	100	130	162	162	182	182
	Percentage of voluntary Blood donation		90%	52	55	60	70	80	80	90
20	Number of plasma Fractionation Units established (Cumulative)		2 Units	1	1	2	2	2	2	2
	<b>PPTCT interventions</b>									
	Number of PPTCT centers established		4955	1508	2815	4333	4955	4955	4955	4955
21	pregnant women covered through PPTCT Counseling	27 million	13.5 million	0.6	6.7	8.1	9.4	10.1	10.8	13.5
	Number of HIV infected mother baby pairs receiving prophylaxis ART		75600	16800	47250	56700	66150	70875	75600	75600
	Number of Community Care Centers established and functioning well		350	50	121	69	120	40	350	350
22	Number of CHC, District & Tertiary Hospitals (PH) having access to PEP		3000	1200	1500	1800	2100	2400	27000	100
	Safety Measures and Infection Control									
23	Number of Public health institutions supported for safety measures		3000	150	450	900	1500	1800	24000	90





# ANNEXURE - II

Year wise proposed budget for National AIDS Control Programme during the 11<sup>th</sup> Five Year Plan (2007-2012)

National AIDS Control Programme Phase III	Rs crore								
Programme components	Year 1	Year 2	Year 3	Year 4	Year 5	Total	per cent		
<b>Objective 1: Prevention</b>									
1. Targeted Interventions among HRGs (FSW, MSM and IDU)	278	398	556	528	528	2288	19.7%		
2. Other interventions (Truckers, Prison, Migrants etc.)	19	25	29	30	29	132	1.1%		
3. Package of Services	213	262	281	301	336	1393	12.0%		
4. Blood Safety (including mobile blood banks)	243	191	243	139	139	955	8.2%		
5. Communication, Advocacy and Social Mobilisation	213	209	219	194	183	1018	8.8%		
6. Condom Promotion	329	362	420	443	446	2000	17.3%		
Sub-total	1295	1447	1748	1635	1661	7786	67.2%		
<b>Objective 2: Care, support and treatment</b>									
7. ART	157	211	265	322	379	1334	11.5%		
7.1 Paediatric ART	11	15	19	28	33	111	1.0%		
7.2 Centre of Excellence	0	5	4	3	3	15	0.1%		
8. Care and support (New Life Centres and Impact Mitigation)	72	103	107	106	105	493	4.3%		
Sub-total	240	334	395	459	525	1953	16.9%		
<b>Objective 3: Capacity Building</b>									
9. Establishment Support and Capacity Strengthening	34	45	60	70	68	277	2.4%		
10. Other Training	102	5	102	6	5	220	1.9%		
11. Mainstreaming/Private Sector Partnerships	26	25	25	24	24	125	1.1%		
Sub-total	162	75	187	100	97	622	5.4%		
<b>Objective 4: Strategic Information Management</b>									
11. Strategic Information Management	30	30	45	45	45	195	1.7%		
12. Surveillance	10	15	15	20	20	80	0.7%		
13. Research	10	15	20	20	20	85	0.7%		

Sub-total	50	60	80	85	85	360	3.1%
14. Managing	44	53	60	66	66	288	2.5%
Programme Implementation							
and Contingency @ 5%	92	102	130	123	130	576	5.0%
<b>Total</b>	<b>1882</b>	<b>2071</b>	<b>2599</b>	<b>2469</b>	<b>2564</b>	<b>11585</b>	<b>100.0%</b>
	16%	18%	22%	21%	22%	100%	



## INTEGRATED DISEASE SURVEILLANCE PROJECT DURING 11<sup>TH</sup> PLAN PERIOD

Integrated Disease Surveillance Project (IDSP) was initiated during 10<sup>th</sup> plan period in November, 2004 with World Bank assistance with the objectives to improve the information available to the government health services and private health care providers on a set of high priority diseases and risk factors, with a view to improve the on-the-ground responses to such diseases and risk factors. The project has components of establishment and operation of a central level disease surveillance unit, integration and strengthening of disease surveillance at state and district levels, improvement of laboratory support and training for disease surveillance and action.

The diseases covered under the project include water-borne diseases and emerging diseases. Surveillance under IDSP includes water quality monitoring/surveillance. The project has been expanded in phased manner to cover all the states/UTs of the country till March, 2007. It is a decentralized, action oriented, integrated and responsive programme.

Satellite Interactive Terminals are proposed to be set up in all the districts by March, 2007. The central hub with studio has been set up at NICD, Delhi. Another hub would be at Nirman Bhawan. Establishment of district data centres in the office of Chief, district health organization, integrated software with connectivity is proposed. Surveillance of risk factors for Non-communicable diseases would be undertaken under the project.

Nine laboratories identified as L4/L5 laboratories are being strengthened under IDSP. These laboratories are (i) National Institute of Communicable Diseases, Delhi, (ii) National Institute of Cholera and Enteric Diseases, Kolkatta, (iii) National Institute of Virology, Pune, (iv) PGI, Chandigarh, (v) CMC, Vellore, (vi) NIMHANS, Bangalore, (vii) KIPM, Chennai, (viii) SGPGI, Lucknow, and (ix) TRC, Chennai. Appropriate equipment, chemicals and reagents may be made available to these laboratories in the 11<sup>th</sup> Plan to diagnose emerging diseases quickly and also to undertake appropriate research.

IDSP is based at the National Institute of Communicable Diseases, Delhi. The Director of the NICD is the National Project Director of IDSP.

### WATER – BORNE DISEASES

#### 1. Magnitude of problem

Disease burden due to water-borne diseases is enormous. Reported data on some of the water-borne diseases in India are given in table-1.



**Table-1: Reported Morbidity on Selected Water Borne Diseases in India during 1996-2005**

Diseases	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
A D D	9130608	8065688	9634787	8215296	8812925	9239783	9441456	10510476	9575112	7915099
Cholera	4425	3173	3554	3839	3879	4178	3455	2893	4728	3154
Viral Hepatitis	131808	133594	113527	131793	152713	146047	135859	151287	203939	134938
Enteric Fever	279438	269455	318510	379304	463578	482863	488033	596684	658301	512557

Source: CBHI, Ministry of Health & F W

These data grossly underestimate the true burden of water-borne diseases. For example, based on the reported data the incidence of viral hepatitis is around 12 per 1,00,000 population. In contrast, community studies from two urban communities have revealed that the incidence may be around 100 per 1,00,000 population. Similarly less than 10 million cases of diarrhoeal diseases are reported every year through routine surveillance system. On the other hand, community studies indicate that every child below 5 years of age has 2-3 episodes of diarrhoea every year. It means many hindered millions cases of diarrhoea occur every year.

Water-borne diseases are major cause of morbidity and mortality in India. Massive inputs have been made by the government to supply safe water. However, morbidity and mortality due to water borne diseases have not declined commensurate with increase in availability of potable water supply. Water supply department usually supplies safe water at sources but the quality is not maintained at consumer point. Limited experience at NICD at Delhi has revealed that about 20% of water samples taken at consumer's points are unsatisfactory. Safe water becomes contaminated during storage due to poor handling practices and poor personal hygiene. Cost effective technology is available to reduce water borne diseases. Several studies shows that whenever focused attention has been made morbidity and mortality declined viz. cholera mortality from diarrhoeal diseases and eradication of guinea worm etc.

## EMERGING AND RE-EMERGING DISEASES

Infectious diseases are a major public health problem in developing countries like India. While many infectious diseases like tuberculosis and malaria are endemic, some of them occasionally attain epidemic proportion. Because of the existing environmental, socioeconomic and demographic situation, the developing countries are also vulnerable to rapidly evolving micro-organisms. During the past three decades more than 30 new organisms have been identified worldwide including HIV, *Vibrio cholerae* O139, Nipah virus, SARS coronavirus and highly pathogenic avian influenza virus A. Many of these organisms emerged in the developing countries of the Asia. Infectious diseases, especially the new emerging and re-emerging diseases, result in high morbidity and mortality and affect the



public health and economy adversely. For example, plague which was not reported from any part of India for almost a quarter of century, caused a major outbreak in Beed district in Maharashtra and Surat in Gujarat in 1994 and resulted in an estimated loss of almost US\$ 1.7 billion.

Severe acute respiratory syndrome (SARS), a newly identified acute viral respiratory syndrome caused by SARS coronavirus (SARS-CoV), probably emerged in Guangdong Province of China in November 2002 and then spread to 26 countries causing 8098 probable cases with 774 deaths including 3 probable cases in India which came from Hong Kong and Singapore. By the time the outbreak could be contained in July 2003, it has caused significant social and economic disruption in the areas with sustained transmission and on the travel industry internationally, in addition to the impact on health services directly.

In the recent times, avian influenza virus A H5N1 has emerged as the potential candidate for the next pandemic. The virus has already affected poultry/wild birds in 54 countries including India and has become firmly entrenched in poultry in many countries, especially in south-east Asia. In addition to spreading geographically, the virus is gradually expanding the host range and also jumping to the humans occasionally.

Three core capacities are essentially required to deal with outbreaks of infectious diseases, especially the emerging and re-emerging diseases. These are (i) establishment/strengthening of a laboratory based disease surveillance system to collect baseline data on infectious diseases, monitor disease trends and to detect epidemics in early rising phase, (ii) development of epidemiological, clinical, entomological and laboratory capacities to investigate the epidemics to characterize the cases in terms of time, person and place and to understand the transmission dynamics, and (iii) development of response capacities to prevent/control the epidemics to reduce the morbidity and mortality to the minimum.

Project cost is approx. Rs. 341.5 crore

(Rs. in crores)

Project Components	2007-08	2008-09	2009-10	2010-11	2011-12	Total
<b>Non-Recurring</b>						
Renovation and Furnishing	6.50	1.36	0.50	0.50	0.50	9.36
Laboratory Equipments	8.22	7.97	1.00	1.00	1.00	19.19
Computer Hardware & Accessories	7.26					7.26
Office Equipments	1.25		1.00	1.25	1.25	4.75
Application Software	4.00					4.00
Furniture and Fixtures	2.25		0.50	0.50	0.50	3.75
Information, Education & Communication	8.00	8.14	7.50	7.50	7.50	38.64
Training of Personnel	3.21	2.07	2.00	2.00	2.00	11.28
Procurement Consultant	0.45					0.45

Software Development	0.27					0.27
Base Line /Evaluation Studies	1.50	2.00	1.00	1.00	1.00	6.50
<b>Sub-total: Non-recurring costs</b>	<b>42.91</b>	<b>21.54</b>	<b>13.50</b>	<b>13.75</b>	<b>13.75</b>	<b>105.45</b>
<b>Recurring</b>						
Laboratory Consumables	8.14	9.87	11.35	13.05	15.00	57.41
Personnel costs	13.94	13.94	15.33	15.33	15.33	73.87
Rental of Wide Area Network	3.50	3.52	4.00	4.40	4.84	20.26
Operational & Maintenance Costs	15.50	15.50	17.82	17.82	17.82	84.46
<b>Sub-total: Recurring costs</b>	<b>41.08</b>	<b>42.83</b>	<b>48.50</b>	<b>50.60</b>	<b>52.99</b>	<b>236.00</b>
<b>Grand Total</b>	<b>83.99</b>	<b>64.37</b>	<b>62.00</b>	<b>64.35</b>	<b>66.74</b>	<b>341.45</b>



## **Pilot Project on Prevention and Control of Human Rabies under XIth Five Year Plan**

### **1. Review of status of on-going major disease control programme (Xth Five Year Plan Period)**

On the basis of a letter received from Bureau of Planning, NICD prepared a SFC Memorandum on Pilot project on Prevention and Control of Human Rabies. However, the annual plan for 2004 – 05 had already been approved by Planning Commission and sent to Ministry of Finance as was stated by Addl. Economic Advisor and hence this could not be taken up.

### **2. Proposed XIth Five Year Plan**

#### **2.1 Key Lessons learnt from Xth Five Year Plan**

Not Applicable as a new programme is being proposed.

### **3. Introduction**

Rabies is an acute viral encephalomyelitis which is invariably fatal but can easily be prevented. Dog is the principal reservoir of rabies in India. It is transmitted to other animals and to humans through close contact with their saliva (i.e. bites, scratches and licks on broken skin and mucous membrane). Tools for prevention and control of rabies have expanded substantially in recent years. This provides a sound technical basis to launch an initiative to control rabies as a major public health problem. Rabies can be controlled with present tools by local health and veterinary system, as some countries have shown. The goal of rabies control will be to prevent human death and control dog rabies so that it no longer remains a major public health problem. This will reduce the socio-economic losses resulting from the disease.

In India, cases of rabies occur throughout the year and in all parts of the country with the exception of water locked islands of Lakshadweep and Andaman and Nicobar. Both sylvatic and urban rabies have been present in this country since ancient times. Urban canine rabies is responsible for significant mortality, morbidity and economic harm due to loss of precious life stock. Man is the dead end of the infection and does not play any role in its spread to new hosts. It is estimated that about 20,000 people die of rabies in India every year. This figure may not be exact, as there is no organised system of surveillance of rabies cases and hence lack of reliable data. There is no reliable data on animal bites in the country, however, estimates suggest that 17.5 million animal bites occur annually. Dogs inflict more than 95% of bites. Monkeys, cats, cattle, mongoose, are some of the other animals which bite human beings forcing them to undergo post exposure treatment. Almost 2/3<sup>rd</sup> of all bites can be categorised into Class III or severe bite

as per WHO guidelines. Based on vaccine utilization 1.8 million elect to receive Post Exposure Treatment. The sheep brain vaccine was being produced in country in 9 centres. Although reactogenic, this vaccine carried a risk of post vaccine neuroparalytic accidents at the rate of 1:4000 to 1:11000. Hence, based on WHO recommendation, the production and use of NTV was stopped in the country in December, 2004. Currently Tissue Culture Vaccines are being used for Post Exposure Prophylaxis. The Tissue Culture Vaccines available in India are of four types i.e. Human Diploid Cell Strain, Purified Chick Embryo Cell, Vero Cell based and Purified Duck Embryo Vaccine which are being produced/imported in the country. Their main advantages are that these vaccines are highly effective and non-reactogenic.

There is at present no comprehensive National Rabies Control Programme in India. Various organizations are currently involved in control activities without any intersectoral coordination. Existing rabies control activities are being carried out by Municipal Corporations/Committees, Cantonments etc. in their respective areas. However, no tangible results could be achieved so far.

Prevention and Control of rabies can be achieved by adopting the following strategy:

- Training health professionals about rabies and animal bite management
- Timely and adequate post exposure treatment to all animal bite victims
- Vaccinate the owned and stray animals with potent vaccine at regular intervals through active community participation, control their habitat, movement and population
- Creating awareness about timely and adequate post exposure treatment to all animal bite victims in the community and dog population management
- Operational research focusing on factors leading to rabies deaths and minimizing animal bites, dog demography and behaviour.

#### **4. Objectives**

The broad objective of the proposed pilot rabies control programme is

- Prevention of human deaths due to rabies.
- Reducing the transmission of disease in animals.

#### **5. Targets, Indicators and Means of Verification**

The specific target is:

- Reduction of rabies deaths in human beings by atleast 50% by the end of 11<sup>th</sup> Five Year Plan in the pilot project areas.



- For verification, the retrospective data will be collected from pilot project areas and continuous surveillance will be maintained till the end of XI th Five Year Plan.

## 6. Strategies

The programme will be implemented as a pilot project, with National Apex Committee for prevention and control of rabies as the Nodal Agency.

National Apex Committee for prevention and control of rabies will be constituted as follows:

Director General of Health Services	- Chairperson
Animal Husbandry Commissioner, GOI	- Member
Joint Commissioner, Live Stock and Health	- Member
Joint Commissioner, Ministry of Information and Broadcasting, Govt. of India	- Member
Director, NICD	- Member
Director IVRI, Izzatnagar	- Member
Director PII, Coonoor	- Member
HOD, Zoonosis Division	- Member Secretary

Broad components include:

### 6.1 Human

- Training of health professionals regarding rabies and appropriate animal bite management
- IEC activities to create awareness about timely and appropriate post-exposure treatment in the community
- Operational Research with the focus on study of factors leading to rabies deaths and minimizing animal bites

### 6.2 Veterinary

- Vaccination of stray dogs
- Sterilization of dogs and population management
- IEC activities on dog population management
- Operational research on dog population census methods, dog demography and behaviour
- Initiatives (proposed activities) with special focus on :
  - Priority areas for basic, clinical, applied and operational research
  - Mechanisms of involvement of NGO/Private sector/Community/Local Self Government in implementation and monitoring programmes

### 6.3 Human Component

The various elements of the programme implementation are as follows:

- Local health authorities will make available the infrastructure and logistics in the pilot project areas for post exposure treatment.
  - Facilities of wound wash at anti rabies clinics will be provided by local health authorities.
  - Surveillance system will be strengthened to generate reliable data. Attempts will be made to integrate surveillance under IDSP network.
  - Development of trained manpower.
  - Development and distribution of IEC material
  - Ensuring community participation in IEC activities.
  - Involvement of NGOs and private sector:
  - Strengthening the Nodal agency for human rabies control (NICD, Delhi) for monitoring and evaluation of the human component.
  - Operational Research with focus on study of factors leading to rabies deaths and minimizing animal bites
1. **Post-exposure treatment:** Civic authorities will plan timely procurement of Tissue Culture Vaccines and rabies immunoglobulins in the pilot project area, utilizing their own funds, for administration to animal bite victims requiring PET. They will ensure wide coverage of bite victims using modern safe tissue culture vaccines. The importance of proper wound toilet will be emphasized and facilities for the same will be provided at anti rabies centres by the local health authorities using their own funds.
  2. **IEC activities:** Multiple myths regarding rabies are prevalent which affect public approach to seek post exposure treatment. The awareness among masses will be created through IEC activities with the help of mass media. NGOs will be appropriately involved and community participation will be ensured.
  3. **Role of NGOs:** NGOs will be involved in creating awareness in the general community.
  4. **Training:** NICD will train the core-trainers who in turn will provide training to medical and paramedical staff regarding rabies and appropriate animal bite management.
  5. **Surveillance:** Intensification of case detection and improvement of reporting system from civic authorities to DHS level will be strengthened. Attempts will be made to integrate surveillance under IDSP network.
  6. **Health education :** Health education will stress on:
    - Education of public to co-operate in the programme to control rabies.
    - Increasing awareness in the public by various audio-visual and publicity methods.



## 6.4 Elimination of dog rabies

To prevent the transmission of disease in animals the respective veterinary departments in the pilot project areas will use their expertise to develop the strategies to ensure the following:

- Vaccination of stray dogs
- Sterilization of dogs and population management
- Waste management
- Dog movement restriction etc.

## 6.5 Elimination of dog rabies

1. **Free of cost vaccination of dog population:** Control of human rabies particularly in endemic areas is best achieved by preventing the disease in dogs. To break the chain of transmission at least 70% of dog population with a potent tissue culture vaccine needs to be vaccinated.
2. **Enforcement of licensing and obligatory registration of dogs:** The licensing and obligatory registration of the dogs will regulate the movement of the dog population and will reduce the chances of human exposure.
3. **Role of NGO's:** NGO's will be involved in vaccination and sterilization of dogs and creating awareness in general community.
4. **Training of veterinary and para – veterinary staff involved in rabies control programme:** The veterinary and para-veterinary staff engaged in catching of stray dogs should be trained in standard humane methods of catching of stray dogs for vaccination and/or sterilization of dogs.
5. **Laboratory services:** Laboratory plays an important role in diagnosis, surveillance and control of rabies. For this purpose, referral as well as diagnostic laboratories need to be identified and suitably strengthened.
6. **Monitoring and Evaluation system including status of MIS, Disease Surveillance, its quality and utilization:** Programme would be periodically monitored and evaluated by National Apex Committee in all the centres. NICD, Delhi would monitor the human component. A consultant with experience in the field of rabies will be engaged by NICD for this purpose. On day to day basis monitoring of the programme in individual cities will be done by the civic authorities.

## 7. Phases of programme implementation

Initially the programme is proposed to be implemented on pilot basis in 2 major cities.

Budget for programme for prevention of human rabies during 11<sup>th</sup> Five Year Plan  
Pilot project (Proposed at four places : Delhi, Pune, Manipur and Hyderabad

I. DELHI  
A. Training of Health Professionals

Delhi population	Doctors @ 0.2%	1/4 <sup>th</sup> of the doctors likely to treat animal bite cases	Training material and refreshment @ Rs.				
1,00,00,000	20,000	5000					

	1 <sup>st</sup> year	2 <sup>st</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total
Training of Health Professionals	6,00,000/-	3,70,000/-	1,10,000/-	10,000/-	10,000/-	11,00,000/-

B. IEC activities (Focusing on dog population management and timely and appropriate PET)

Material	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total for 5 years
Health education (Films, Posters, Pamphlets, Hoardings, etc)	20,00,000/-	5,00,000/-	5,00,000/-	5,00,000/-	5,00,000/-	40,00,000/-

C. Operational Research

Subject	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total
Prospective and retrospective study of Hydrophobia cases to study the epidemiology of the disease (developing of performae, laboratory diagnosis, strain characterization, etc)	15,00,000/-	12,00,000/-	12,00,00 0/-	12,00,00 0/-	12,00,00 0/-	63,00,000/-
Reporting of rabies cases and animal bite cases in Humans(developing of performae, correspondence, monitoring and analysis etc)	7,50,000/-	6,00,000/-	6,00,000/ -	6,00,000/ -	6,00,000/ -	31,50,000/-



Total	22,50,000/-	18,00,000/-	18,00,000/-	18,00,000/-	18,00,000/-	94,50,000/-
				0/-	0/-	0/-

### D. Pre Exposure Immunization of dogs

	No. of dogs @ 1 dog/40 people	No. of dogs to be immunized per year	No. of injections per year	Cost @ 40/- injection	Rs. per injection	Total cost for 1 <sup>st</sup> year	Total cost for 2 <sup>nd</sup> year to 5 <sup>th</sup> year increase @ 20%	Total cost for 5 years
Vaccine & licensing	2,50,000	175000	1	Rs. 50/- per year/dog		87,50,000/-	2 <sup>nd</sup> year- Rs.1,05,00,000/- 3 <sup>rd</sup> year- Rs.1,26,00,000/- 4 <sup>th</sup> year-Rs. 1,51,20,000/- 5 <sup>th</sup> year- Rs. 1,81,44,000/-	Rs.6,51,14,000/-
Collars, tags etc. @ Rs. 10/-		1,75,000				17,50,000/- per year	21,00,000/-; 25,20,000/-; 30,24,000/-; 36,28,800/-	Rs.1,30,22,800/-
Van, refrigerators, cages, tungs, utensils etc.						Non-recurring expenditure: 6,50,000/- for 1 <sup>st</sup> year x 4 units		Rs.26,00,000/-
Total								Rs.8,07,36,800/-

E. Sterilization of dogs @ 500/dog x 175000 = Rs. 8,75,00,000/-

F. Strengthening of laboratory

	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total
Strengthening of local lab.	5,00,000/-	50,000/-	50,000/-	50,000/-	50,000/-	7,00,000/-

G. Operational Research

Subject	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total
Methods of dog population census – comparison of methods	Rs. 7,50,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs.31,50,000/-
Dog demography and behaviour in different localities	Rs. 7,50,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs.31,50,000/-
Reporting of rabies cases in 1. Animals	Rs. 7,50,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs.31,50,000/-
Total	Rs.22,50,000/-	Rs. 18,00,000/-	Rs. 18,00,000/-	Rs. 18,00,000/-	Rs. 18,00,000/-	Rs. 94,50,000/-

Total expenditure required for 5 years for Delhi city

A. Training of Health Professionals	:	Rs. 10,00,000/-
B. IEC activities	:	Rs. 40,00,000/-
C. Operational Research	:	Rs. 94,50,000/-
D. Pre-exposure immunization of dogs	:	Rs. 8,07,36,800/-
E. Sterilization of dogs	:	Rs. 8,75,00,000/-
F. Strengthening of laboratory	:	Rs. 7,00,000/-
G. Operational Research – Animals	:	Rs. 94,50,000/-
Grand Total:	:	Rs. 19,28,36,800/-



## II. PUNE MUNICIPAL CORPORATION

### A. Training of Health Professionals

Pune population	Doctors @ 0.2%	1/4 <sup>th</sup> of the doctors likely to treat animal bite cases	Training material and refreshment @ Rs. 200/- per head
25,00,000	5,000	1,250	2,50,000/-

	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total
Training of Health Professionals	1,50,000/-	70,000/-	10,000/-	10,000/-	10,000/-	2,50,000/-

### B. IEC activities (Focussing on dog population management and timely and appropriate PET)

Material	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total for 5 years
Health education (Films, Posters, Pamphlets, Hoardings, etc)	15,00,000/-	2,00,000/-	2,00,000/-	2,00,000/-	2,00,000/-	23,00,000/-

### C. Operational Research

Subject	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total
Prospective and retrospective study of Hydrophobia cases to study the epidemiology of the disease (developing of performae, laboratory diagnosis, strain characterization, etc)	15,00,000/-	12,00,000/-	12,00,000/-	12,00,000/-	12,00,000/-	63,00,000/-
Reporting of rabies cases and animal bite cases in Humans(developing of performae, correspondence, monitoring and analysis etc)	7,50,000/-	6,00,000/-	6,00,000/-	6,00,000/-	6,00,000/-	31,50,000/-
<b>Total</b>	<b>22,50,000/-</b>	<b>18,00,000/-</b>	<b>18,00,000/-</b>	<b>18,00,000/-</b>	<b>18,00,000/-</b>	<b>94,50,000/-</b>

D. Pre Exposure Immunization of dogs

	No. of dogs @ 1 dog/40 people	No. of dogs to be immunized per year	No. of injections per year	Cost @ Rs. 40/- per injection	Total cost for 1 <sup>st</sup> year	Total cost for 2 <sup>nd</sup> year to 5 <sup>th</sup> year increase @ 20%	Total cost for years
Vaccine & licensing	62,500	43750	1	Rs. 50/- per year/dog	21,87,500/-	2 <sup>nd</sup> year- Rs.26,25,000/-, 3 <sup>rd</sup> year- Rs. 31,50,000/- 4 <sup>th</sup> year-Rs. 37,80,000/- 5 <sup>th</sup> year- Rs. 45,36,000/-	Rs.1,62,78,500
Collars, tags etc. @ Rs. 10/-		43750			4,37,500/- per year	5,25,000/-; 6,30,000/-; 7,56,000/-; 9,07,200/-	Rs.32,55,700/-
Van, refrigerators, cages, tungs, utensils etc.		-			Non-recurring expenditure: 6,50,000/- for 1 <sup>st</sup> year x 4 units		Rs.26,00,000/-
Total							Rs.2,21,34,200

E. Sterilization of dogs @ 500/dog x 43750 = Rs. 2,18,75,000/-

F. Strengthening of laboratory

	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total
Strengthening of local lab.	5,00,000/-	50,000/-	50,000/-	50,000/-	50,000/-	7,00,000/-



### G. Operational Research

Subject	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total
Methods of dog population census - comparison of methods	Rs. 7,50,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 31,50,000/-
Dog demography and behaviour in different localities	Rs. 7,50,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 31,50,000/-
Reporting of rabies cases in 2. Animals	Rs. 7,50,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 6,00,000/-	Rs. 31,50,000/-
Total	Rs. 22,50,000/-	Rs. 18,00,000/-	Rs. 18,00,000/-	Rs. 18,00,000/-	Rs. 18,00,000/-	Rs. 94,50,000/-

### Total expenditure required for 5 years for Pune city

A. Training of Health Professionals	:	Rs. 2,50,000/-
B. IEC activities	:	Rs. 23,00,000/-
C. Operational Research	:	Rs. 94,50,000/-
D. Pre-exposure immunization of dogs	:	Rs. 2,21,34,200/-
E. Sterilization of dogs	:	Rs. 2,18,75,000/-
F. Strengthening of laboratory	:	Rs. 7,00,000/-
G. Operational Research ~ Animals	:	Rs. 94,50,000/-
Grand Total:	:	Rs. 6,54,59,200/-

# Budget for programme for prevention of human rabies during 11<sup>th</sup> Five Year Plan

## Budget for activities at NICD

	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	Total
Consultant *	3,50,000	3,50,000	3,50,000	3,50,000	3,50,000	17,50,000/-
Data entry operator	96,000/-	96,000/-	96,000/-	96,000/-	96,000/-	4,80,000/-
STD phone	50,000/-	50,000/-	50,000/-	50,000/-	50,000/-	2,50,000/-
Computer	1,50,000/-	-	-	-	-	1,50,000/-
Development of IEC material (films, posters, pamphlets, hoardings etc.)	10,00,000/-	1,00,000/-	1,00,000/-	1,00,000/-	1,00,000/-	14,00,000/-
Monitoring and evaluation	1,00,000/-	1,00,000/-	1,00,000/-	1,00,000/-	1,00,000/-	5,00,000/-
Meetings & trainings**	5,00,000/-	5,00,000/-	5,00,000/-	5,00,000/-	5,00,000/-	25,00,000/-
Laboratory reagents	1,50,000/-	1,50,000/-	1,50,000/-	1,50,000/-	1,50,000/-	7,50,000/-
Contingency	50,000/-	50,000/-	50,000/-	50,000/-	50,000/-	2,50,000/-
<b>Grand total</b>	<b>24,46,000/-</b>	<b>13,96,000/-</b>	<b>13,96,000/-</b>	<b>13,96,000/-</b>	<b>13,96,000/-</b>	<b>80,30,000/-</b>

\* 1. Monitoring and evaluation of programme

2. Field based at-site training

3. Maintenance of accounts

4. Organisation of meetings and trainings at NICD

5. Monitoring of projects under operational research

Budget for the training course as follows:

Total number of training courses to be conducted

Courses for Delhi participants

Courses for Outside Delhi participants

8  
4  
4

T.A.	D.A.	Teaching material	Refreshment	Contingency	Total
7,00,000/- (approx.)	50,000/- (300 per participant per day for 2 days)	50,000/-	50,000/-	1,50,000/-	10,00,000/-



# Total budget at a glance year-wise- Health Component

	2007-08	2008-09	2009-10	2010-11	2011-12	Total
<b>Training of Health Professionals</b>						
Delhi	600000	370000	110000	10000	10000	1100000
Pune	150000	70000	10000	10000	10000	250000
<b>Total</b>	<b>750000</b>	<b>440000</b>	<b>120000</b>	<b>20000</b>	<b>20000</b>	<b>1350000</b>
<b>IEC activities</b>						
Delhi	2000000	500000	500000	500000	500000	4000000
Pune	1500000	200000	200000	200000	200000	2300000
<b>Total</b>	<b>3500000</b>	<b>700000</b>	<b>700000</b>	<b>700000</b>	<b>700000</b>	<b>6300000</b>
<b>Operational Research</b>						
Delhi	2250000	1800000	1800000	1800000	1800000	9450000
Pune	2250000	1800000	1800000	1800000	1800000	9450000
<b>Total</b>	<b>4500000</b>	<b>3600000</b>	<b>3600000</b>	<b>3600000</b>	<b>3600000</b>	<b>18900000</b>
<b>Activities at NICD</b>	<b>2446000</b>	<b>1396000</b>	<b>1396000</b>	<b>1396000</b>	<b>1396000</b>	<b>8030000</b>
<b>Grand total</b>	<b>11196000</b>	<b>6136000</b>	<b>5816000</b>	<b>5716000</b>	<b>5716000</b>	<b>34580000</b>

### Total budget at a glance– Veterinary Component

	2007-08	2008-09	2009-10	2010-11	2011-12	Total
<b>Pre-exposure immunization of dogs</b>						
Delhi	13100000	12600000	15120000	18144000	21772800	80736800
Pune	5225000	3150000	3780000	4536000	5443200	22134200
<b>Sub Total</b>	<b>18325000</b>	<b>15750000</b>	<b>18900000</b>	<b>22680000</b>	<b>27216000</b>	<b>102871000</b>
<b>Sterilization of dogs</b>						
Delhi	17500000	17500000	17500000	17500000	17500000	87500000
Pune	4375000	4375000	4375000	4375000	4375000	21875000
<b>Sub Total</b>	<b>21875000</b>	<b>21875000</b>	<b>21875000</b>	<b>21875000</b>	<b>21875000</b>	<b>109375000</b>
<b>Strengthening of laboratory</b>						
Delhi	500000	50000	50000	50000	50000	700000
Pune	500000	50000	50000	50000	50000	700000
<b>Sub Total</b>	<b>1000000</b>	<b>100000</b>	<b>100000</b>	<b>100000</b>	<b>100000</b>	<b>1400000</b>
<b>Operational Research</b>						
Delhi	2250000	1800000	1800000	1800000	1800000	9450000
Pune	2250000	1800000	1800000	1800000	1800000	9450000
<b>Sub Total</b>	<b>4500000</b>	<b>3600000</b>	<b>3600000</b>	<b>3600000</b>	<b>3600000</b>	<b>18900000</b>
<b>Total Veterinary</b>	<b>45700000</b>	<b>41325000</b>	<b>44475000</b>	<b>48255000</b>	<b>52791000</b>	<b>232546000</b>
<b>Total Health</b>	<b>11196000</b>	<b>6136000</b>	<b>5816000</b>	<b>5716000</b>	<b>5716000</b>	<b>34580000</b>
<b>Grand Total</b>	<b>56896000</b>	<b>47461000</b>	<b>50291000</b>	<b>53971000</b>	<b>58507000</b>	<b>267126000</b>



# LEPTOSPIROSIS CONTROL PROGRAMME

## 1. Lessons learnt in Xth Five Year Plan

Not Applicable as a new programme is being proposed

## 2. Introduction

Due to rapid ecological changes in the region during the past decade many zoonoses have emerged and resulted into epidemics causing significant morbidity and mortality in human beings in different parts of the country. Leptospirosis is one of the diseases which predominantly occurs in coastal region. The Andaman Islands have been known to be an endemic focus of leptospirosis since the 1920s. The outbreaks of leptospirosis have been reported from coastal districts of Gujarat, Maharashtra, Kerala, Tamil Nadu, Andhra Pradesh, Karnataka and Andamans from time to time. In addition, cases have been reported from Goa and Orissa.

## 3. Objectives

The objectives of the programme are as follows:

- To establish the surveillance in the country.
- To reduce the morbidity and mortality due to leptospirosis in India

## 4. Targets, indicators and means of verification

The control programme is proposed to be carried out in phased manner. In first phase it is proposed to be conducted in Kottayam district of Kerala and South Gujarat. The reduction in morbidity and mortality would be the indicator for the effective implementation of the programme.

## 5. Strategy

- **Development of data base:** Prompt collection of reports through routine and IDSP systems will help to develop correct and timely data which will help in designing strategies. The participation of the private sector in prompt reporting assumes great significance. The present system of late reporting from the periphery is due to lack of communication facilities in the periphery and even in some districts. Efforts at capacity building of the staff in reporting, analyzing transmission and storage of data will definitely improve the quality and reliability of the reports.
- **Identifying the vehicle of transmission:** Rodents and domestic animals are identified as the major source of infection. But we do lack scientific studies to substantiate this. Hence it is proposed to conduct studies to identify the



vehicles of transmission. The active support of the departments of Animal Husbandry, Agriculture and local administration in this endeavour will be required. Rodent profiling is proposed to be done in endemic areas by the department of Agriculture. Isolation of leptospires from the rodents and domestic animals can be done at the veterinary colleges of endemic areas. Serum sampling of cattle and dogs from selected areas using serological and PCR techniques will be attempted. Steps are also being planned to identify the serovars detected.

- **Identification of serovar prevalence in endemic states:** Scientific studies to identify the serovars prevalent in different geographical areas have not yet been conducted except for small studies conducted by some veterinary institutes and RMRC, Port Blair. It is proposed to develop facilities to identify the serovars using PCR and culture and isolation. For this the active support of RMRC, Port Blair and IVRI, Izatnagar would be required.
- **Identifying the causes of upsurge:** A definite cause cannot yet be given for the increase in incidence of leptospirosis in India. The predisposing factors like humidity, soil salinity, soil temperature, pH etc. should be proved before declaring these factors responsible for the survival of leptospira. Demographic factors, mass movement of population, harvesting and the stagnant water bodies will be studied for their role in leptospirosis. The help of National Bureau of Soil Survey is being sought for the studies on soil pH, salinity and temperature.
- **Strengthening diagnostic facilities:** Laboratory diagnosis has to be made more efficient and speedy. Detection of IgM antibodies against Leptospirosis by rapid screening tests would be carried out at CHC/District hospitals. The facilities for ELISA, Microscopic Agglutination Test (MAT), isolation and PCR would be established at tertiary level health care facility in areas where programme has to be implemented.
- **Improving management facilities:** The increase in mortality seen over the past twelve years is proof enough that the present facilities are not sufficient to meet the complications of leptospirosis. It is also noted by clinicians that complications like ARDS and myocarditis are increasingly seen. It is proposed to develop one tertiary level hospital in every endemic area which will be fully equipped to treat the complicated cases of leptospirosis. The facilities will include ICU, dialysis unit and all the resuscitation facilities required. It is also proposed to keep reserve funds to tackle outbreak situations. In order to facilitate early diagnosis and prompt treatment, a diagnosis and treatment protocol will be circulated to all the medical officers.
- **Health Education:** The main preventive measure for leptospirosis is to create awareness about the disease and its prevention. This will be carried out by an intensive educational campaign.
- **Reducing mortality to zero in five years:** With the effective implementation of the points mentioned above it is expected that the mortality due to leptospirosis will come down to zero in five years time.



## 6. Initiatives

Leptospirosis occurs as a result of amplification and transmission of infectious agents. These are silent background phenomena; disease in the host is their visible result. Thus, detecting disease and its distribution in time and space offers clues to the silent background phenomena of amplification and transmission. Once these are recognized, intervention may be applied to break transmission or reduce amplification. Thus, detecting disease, as when and where it occurs, and its clustering, are essential for disease control. Surveillance, in other words, is the first step in intervention.

The three major factors responsible for leptospirosis - (a) salinity of the soil, (b) adequate moisture, and (c) presence of microorganisms in reservoir/carrier hosts have been established in the regions of Maharashtra and Gujarat in addition to Andamans, from where the leptospirosis outbreaks have been confirmed. The epidemiological, rodentological, and agro-ecological studies will be carried out from where leptospira outbreaks have been confirmed. The other regions that have similar agro-ecological conditions will also be studied and earmarked as potential areas for leptospirosis. To undertake this activity, the help from the following institutions will be sought -

- National Bureau of Soil Survey & Land Resource Management
- Department of Meteorology
- Rodent Control Board of India
- Department of Animal Husbandry of endemic states

## 7. Modalities to improve efficiency and quality of services

The agro-ecological factors that will be established after the above-mentioned study will be plotted and accordingly the endemic areas will be ear marked. The areas from where the disease has not yet been reported but where similar agro-ecological factors prevail will be separately ear marked as 'Leptospira-Prone Areas'.

## 8. Monitoring and Evaluation system

After establishing the dynamics of disease transmission, health risk assessment and other issues related to endemicity of Leptospirosis in a given area, the occurrence of Leptospirosis will be an indicator in an area having similar agro-climatic factors.

## 9. Institutional Networking

For conduction of this study NICD will network with regional institutions and keep itself updated on the latest developments. NICD will act as a resource centre for

the dissemination of relevant technical information. The networking of following institutions will be done for effective monitoring of the disease

1. RMRC, Port Blair
2. IVRI, Izatnagar
3. NICD Branches
  - Calicut (Kerala)
4. Medical/Veterinary Colleges of endemic region.
5. ICMR Regional Laboratories of endemic region.

## 10. Sustainability

The objective of this programme is to begin systematic surveillance to improve the completeness and quality of reporting. This study will address the dynamics of disease transmission, health-risk assessment and other issues of importance. The information collected by scientific analysis and interpretation of the data will help in strengthening of existing surveillance system in the established endemic areas, setting up of surveillance system in the potential earmarked areas and establishment of specific control/preventive measures to help curb the disease.

## 11. Estimated Budget

The financial implications for conduction of the study are:

	(Rs. in crores)					
	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Strengthening diagnostic support	6.50	-	-			6.50
Improving management facilities in hospitals	2.40	-	-			2.40
Establishment charges	2.05	0.11	0.11	0.11	0.11	2.49
Materials for diagnostic support	0.50	0.50	0.50	0.50	0.50	2.50
Consumables for management facility	0.24	0.24	0.24	0.24	0.24	1.20
IEC	0.09	0.09	0.09	0.10	0.10	0.47
Training	0.24	0.24	0.24	0.24	0.24	1.20
Rodenticidal action	0.70	0.70	0.70	0.70	0.70	3.50
<b>Total</b>	<b>12.72</b>	<b>1.88</b>	<b>1.88</b>	<b>1.89</b>	<b>1.89</b>	<b>20.26</b>



## NATIONAL CENTRE FOR DISEASE CONTROL

The proposal to strengthen NCDC as the National Centre for Disease Control (NCDC) (Budget approx. Rs 95 crores from 2006-07 to 2011-12) which is already under the consideration of the Govt. may be included in the 11<sup>th</sup> Plan. The budget proposal for XI Plan period works out to be Rs. 89.95 crores.

### Budget required for proposed NCDC (Including Field Stations)

(Figure in crores)

Major Heads	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total
1. Supportive infrastructural development	1.0	15.0	9.0	9.0	9.0	4.0	47.0
2. Consultants/ Faculty/ staff-salary/ wages	1.0	1.0	1.1	1.20	1.50	1.60	7.4
3. Machine & Equipment (i) non-recurring	1.0	10.0	4.0	3.0	3.0	3.0	24.0
(ii) recurring	0.10	0.10	0.15	0.20	0.30	0.30	1.15
4. Reagents/ chemicals/ kits	0.50	0.60	1.0	1.50	1.50	1.70	6.80
5. Other administrative expenses (includes training, workshops, seminars, faculty skill development)	1.0	1.0	1.0	1.0	1.0	2.0	7.0
5. Motor vehicle	0.10	0.30	0.10	0.10	0.10	0.10	0.80
6. Office expenses	0.10	0.10	0.10	0.10	0.10	0.10	0.60
<b>Total</b>	<b>4.8</b>	<b>28.1</b>	<b>16.45</b>	<b>16.1</b>	<b>16.5</b>	<b>12.8</b>	<b>94.75</b>

### Budget for XI Plan

	2007-08	2008-09	2009-10	2010-11	2011-12	Total
<b>NCDC</b>	<b>28.1</b>	<b>16.45</b>	<b>16.1</b>	<b>16.5</b>	<b>12.8</b>	<b>89.95</b>

# **NON-COMMUNICABLE DISEASES**





# NATIONAL CANCER CONTROL PROGRAMME

## Magnitude of the problem

### Global

Cancers in all forms are causing about 6 million deaths (12 per cent) worldwide. In the developed countries cancer is the second leading cause of death accounting for 21% (2.5 million) of all mortality. In the developing countries cancer ranks third as a cause of death and accounts for 9.5% (3.8 million) of all deaths. According to WHO estimates by the year 2020 the number of cancer deaths would have gone upto 10 million annually. Tobacco, alcohol, infections and hormones contribute towards occurrence of common cancers all over the world.

### India

Cancer has become one of the ten leading causes of death in India. It is estimated that there are nearly 7 to 9 lakh cases occurring every year. At any point of time, it is estimated that there are nearly 25 lakh cases in the country. Data from population-based registries under National Cancer Registry Programme indicate that the leading sites of cancer have remained unchanged over the years namely oral cavity, lungs, oesophagus and stomach amongst men and cervix, breast and oral cavity amongst women. Cancers namely those of oral and lungs in males, and cervix and breast in females account for over 50% of all cancer deaths in India. WHO has estimated that 91 per cent of oral cancers in South-East Asia are directly attributable to the use of tobacco and this is the leading cause of oral cavity and lung cancer in India.

### Milestones

1975-76      National Cancer Control Programme was started. At that time priorities were given for equipping, the premier cancer hospital/institutions. Central assistance at the rate of Rs.2.50 lakhs was given to each institution for purchase of cobalt machines.

The strategy was revised and stress was laid on primary prevention and early detection of cancer cases. District Cancer Control Programme was started in selected districts (near to the medical college hospitals).

Modified District Cancer Control programme initiated.

2004-05      The programme was further revised with an increase in the quantum and scope of the schemes under the programme.



## Goals & Objectives of NCCP (Revised Strategy)

1. Primary prevention of cancers by health education specially regarding hazards of tobacco consumption and necessity of genital hygiene for prevention of cervical cancer.
2. Secondary prevention i.e. early detection and diagnosis of cancers, for example, cancer of cervix, breast and of the oro-pharyngeal cancer by screening methods and patients' education on self examination methods.
3. Strengthening of existing cancer treatment facilities, which are woefully inadequate.
4. Palliative care in terminal stage of the cancer.

### Existing Schemes under National Cancer Control Programme (NCCP):

- There are 5 schemes under the Revised Programme –
  1. Recognition of new Regional Cancer Centres (RCCs): A one-time grant of Rs. 5.00 crores is being provided for New RCCs.
  2. Strengthening of existing RCCs: A one-time grant of Rs.3.00 crores is provided to the existing RCCs.
  3. Development of Oncology Wing: Grant has been enhanced to Rs. 3.00 crores to the Government institutions (Medical Colleges as well as government hospitals).
  4. District Cancer Control Programme: The grant-in-aid has been increased to Rs. 90.00 lakhs spread over a period of 5 years.
  5. Decentralized NGO Scheme: A grant of Rs. 8000/- per camp will be provided to the NGOs for IEC activities.

### Regional Cancer Centres

The number of regional centres has been raised to twenty five, The functions of the regional centres are:

1. Cancer diagnosis, treatment and follow up.
2. Surveys of cancer mortality and morbidity.
3. Training of personnel both medical and para medical.
4. Preventive measures with emphasis on health education especially for tobacco related cancers.
5. Research (fundamental and applied)
6. Rehabilitation

Linkages and referral system between RCC, medical colleges and other institutions needs to be developed. Referral system (Regionalisation) can be done by states for optimal utilization and also for availing services from grantee institutions.

## List of Regional Cancer Centres

1. Kidwai Memorial Institute of Oncology, Bangalore (Karnataka)
2. Gujarat Cancer & Research Institute, Ahmedabad
3. Cancer Hospital Research Institute, Gwalior (MP)
4. Cancer Institute, Chennai, (Tamil Nadu)
5. Regional Cancer Centre, Trivandrum (Kerala)
6. Regional Centre for Cancer Research and Treatment Society, Cuttack
7. Dr. B.B. Cancer Institute, Guwahati (Assam)
8. Chittaranjan National Cancer Institute, Kolkata (West Bengal)
9. Institute Rotary Cancer Hospital (AIIMS), New Delhi.
10. Tata Memorial Hospital, Mumbai (Maharashtra)
11. Kamla Nehru Memorial Hospital, Allahabad (U.P.)
12. MNJ Institute of Oncology, Hyderabad (A.P.)
13. R.S.T. Cancer Hospital, Nagpur.
14. I.G.I.M.S. Patna, Bihar.
15. S.P. Medical College, Bikaner, Rajasthan.
16. Indira Gandhi Medical College, Shimla.
17. Post Graduate Institute of Medical Sciences, Rohtak.
18. Pt. J.N.M. Medical College & RCC, Raipur, Chhattisgarh
19. Post Graduate Institute of Medical Education and Research, Chandigarh
20. Government Arignar Anna Memorial Cancer Research Institute and Hospital, Kancheepuram
21. Sher-i-Kashmir Institute of Medical Sciences, Srinagar, J&K
22. Sanjay Gandhi Post-graduate Institute of Medical Sciences (SGPGI), Lucknow
23. JIPMER & Pondicherry Cancer Care Society, Pondicherry
24. Civil Hospital, Aizawl, Mizoram
25. Regional Institute of Medical Sciences, Imphal, Manipur

### Oncology Wing Development Scheme:

Under this scheme, Government medical colleges and government hospitals not attached to medical colleges are provided financial assistance to augment cancer treatment facilities. There are more than 50 Oncology wings in the country at present.

**District Cancer Control programme:** A cluster of 3 congruent districts are developed for prevention and early detection of cancer at district levels through the Nodal Agency which is an RCC or an Oncology Wing.

**Decentralised NGO scheme:** The NGOs are provided Rs.8000/- per camp for prevention and early detection of cancers. The funds are released through the Nodal Agency which could be an RCC or Oncology Wing.

**Palliative care:** Palliative Care facilities in the country are yet to be developed. Morphine availability still remains a problem in many states. Drugs and



cosmetic act has been amended recently to make the morphine available. Some states are yet to adopt this.

### New Initiatives:

- A National taskforce has been constituted to formulate strategies for the XI Five Year Plan under the NCCP.
- India has become the member of International Agency for Research on Cancer (IARC)
- Onconet-India: telemedicine project to connect 25 RCCs and each RCC with 4 to 5 peripheral centres is being operationalised and C-DAC Trivandrum has been entrusted with the responsibility of preparing Detailed Project Report.
- Cancer Atlas linking 105 centres across the country has helped in generating the pattern of cancer across many parts of the country. Further expansion of the Cancer Atlas and the Cancer Registry programme is under consideration.
- IEC activities for cancer have been strengthened with audio-visual material being produced by the Ministry
  - Kalyani, a health magazine on Doordarshan has been utilised to beam health related messages in 8 states across the country
- Manuals for Training of health professionals in Cancer, Tobacco Cessation, Cytology and Palliative Care have been developed by the Ministry
- The website of cancer has been updated with all cancer resource materials.

There are some activities, which are carried out under the National Cancer Control Programme out of WHO funding under the biennium pattern. In the current biennium i.e. 2006-07, following are being carried out: -

Community based cancer control programmes, mainly as pilot projects

- Training of health care personnel at district level in early detection and awareness of cancer.
- Telemedicine in cancer
- IEC activities including National Cancer Awareness Day

### Funding Pattern

In the tenth five-year plan the total plan allocation was Rs.266.34 crores.

(Rs. in crores)

Activity	2002-03 (Exp.)	2003-04 (Exp.)	2004-05	2005-06	2006-07	Total
RCCs (Existing)*	10.10	10.48	17.00	10.00	17.00	64.58
New Proposed *(3)	-	-	5.00	10.00	5.00	20.00
IRCH(AIIMS)*	10.00	0.75	-	-	-	10.75
CNCI (Ongoing)	7.00	6.00	4.00	4.00	4.00	25.00
CNCI (New campus)	-	-	7.00	13.00	10.00	30.00
Cobalt (only till 03-04)	9.50	1.59	-	-	-	11.09

DCCP	-	-	5.50 (25)	9.75 (25+25)	15.10 (50+30)	30.35
Oncology @ 2 Cr. in 03-04 & @ 3 Cr in remaining years.	8.21	3.58	12.00	12.00	12.00	47.79
NGO scheme (revised)	-	-	3.50	3.50	3.00	10.00
IEC (incl. NGO scheme till 31.3.2004)	2.33	1.80	3.25	2.25	3.15	12.78
Research & Training	-	-	1.75	1.50	0.75	4.00
	<b>47.14</b>	<b>24.20</b>	<b>59.00</b>	<b>66.00</b>	<b>70.00</b>	<b>266.34</b>

Under the XI Five Year Plan, a taskforce comprising experts from across the country was constituted. (Annexure1). A recommendation of Rs.2000.00 crores has been proposed based on recommendations from the National taskforce and discussions within the ministry.

### Strategies

1. Prevention and early detection of cancers through District cancer control activities and strengthened IEC campaign.
2. To promote 'centres of excellence' in the field of cancer management with support to existing RCCs of 20 years of proven track record by providing financial assistance.
3. To augment comprehensive cancer care facilities across the country through institutional capacity building in new and existing regional cancer centres and through new and existing oncology wings.
4. Development of early diagnostic capabilities in district hospitals
5. Encouraging public private partnership
6. Increase capacity for palliative care in cancer
7. Promote research in cancer that would be relevant to cancer control in India.
8. Capacity building and training of all personnel in cancer prevention and early detection to be done for all categories in phased manner.
9. Health education of the general public through use of audio, video and print media regarding prevention and early detection of cancers.  
Development of messages would be necessary in this regard.
10. Promote innovations in cancer care and indigenisation of cancer treatment equipment.

### Approach

- 1) Cancer treatment facilities:
  - a) Financial assistance would be provided to existing institutions for augmentation of facilities.
  - b) Newer centres also would be supported based on the need of the region and capacity of the institution
  - c) District cancer control projects would be provided assistance for enhancing the capacity at district level for prevention and early detection of cancers
- 2) The charitable and private sector shall be mobilised to participate in cancer control activities through recognition of NGO or private health care facilities



in cancer as NCCP Collaborating centres which would be involved in cancer control activities under NCCP.

- 3) Increase palliative care facilities through establishment of palliative care wings in all cancer care facilities, provide appropriate training and increase availability of morphine.
- 4) Support human resource development in paramedical and cancer fields as relevant to the cancer control needs of the country through RCCs and Oncology Wings
- 5) Audio-visual and print media would be used for dissemination of IEC material produced by the Ministry.
- 6) Provide support to institutions for procuring indigenous radiotherapy equipment and also adopting innovative techniques for improving cancer care
- 7) The regional cancer centres are having a leadership role in the area and are reasonably equipped. Now the time has come when some institutions should be upgraded with world-class facilities and redesignated as 'Centres of Excellence'. Institutions with a proven track record of more than 20 years would be supported financially in this regard.

It is proposed that 9 RCCs would be selected for upgradation into Centres of Excellence in Phase I depending on the geographical disparity and resulting need and the load of cancer care. The 9 RCCs selected in Phase I are:

Region	Name of the RCC
East	Acharya Harihar Regional Cancer Centre Cuttack.
South	Kidwai Memorial Institute of Oncology, RCC Bangalore
	MNJIO, RCC Hyderabad.
	Regional Cancer Centre, Trivandrum
	Arignar Anna Memorial Cancer Hospital, Kancheepuram
North East	B Borooah Cancer Institute, Guwahati
Eastern	Kamala Nehru Memorial Hospital, Allahabad
Central	Jan Vikas Nyas, Regional Cancer Centre Gwalior.
West	Gujarat Regional Cancer Centre Ahmedabad

The remaining 16 RCCs are proposed to be covered subsequently in Phase II

- 8) Research would continue to be a thrust area and RCCs and ICMR would be urged to carry out research that will be relevant to the cancer control needs of the country. The cancer registries would be continued and expanded.
- 9) There would be regular monitoring of NCCP implementation through review meetings, visits, etc.

#### Outlay for 11<sup>th</sup> Plan

Rs. 2000.00 crores

#### Funding pattern

Out of the Plan funds from Govt. Of India, the yearly allocation is proposed to be increased every year from 300.00crore in the first year to 500.00crores in

the last year. The equipments are cost intensive which is increasing even more than the inflation. More number of institutions are coming up with proposals for facilities including RCCs.

**Proposed yearly allocation**

2007-08	Rs.300.00
2008-09	Rs.350.00
2009-10	Rs.400.00
2010-11	Rs.450.00
2011-12	Rs.500.00
<b>Total</b>	<b>Rs.2000.00 crores</b>



# NATIONAL PROGRAMME FOR CONTROL OF BLINDNESS

## Introduction

National Programme for Control of Blindness (NPCB) was launched in the year 1976 as a 100% centrally sponsored programme with the goal of reducing the prevalence of blindness.

India was the first country to launch the National Programme for Control of Blindness in 1976 with the goal of reducing the prevalence of blindness. Out of the total estimated 37 million blind person (VA<3/60) in the world, 7 million are in India. Due to the large population base and increased life expectancy, the number of blind particularly due to senile disorders like Cataract, Glaucoma, Diabetic Retinopathy etc. is expected to increase.

## The objectives of the programme

- To reduce the backlog of blindness through identification and treatment of blind;
- To develop Eye Care facilities in every district,
- To develop human resources for providing Eye Care Services;
- To improve quality of service delivery;
- To secure participation of Voluntary Organizations in eye care

## Important Landmarks

- 1994 :Launch of World Bank Assisted Cataract Blindness Control Project in Major States (UP,MP, Rajasthan, Orissa, Maharashtra, Tamilnadu, Andhra Pradesh, Uttaranchal & Chattisgarh)
- 2002 : World Bank Project ended; rated as highly satisfactory by the World Bank.
- 2004 : Revised pattern of Assistance for the 10<sup>th</sup> plan approved from 1.10.2004.

## Prevalence & Causes of Blindness & Future Goals

Year	Prevalance	Remarks
1971-74	1.38%	Cataract leading cause (75%)
1986-89	1.49%	Cataract Blindness increased to 80%, Trachoma and Vitamin A related blindness reduced
2001-04	1.10%	Cataract reduced to 63%, Refractive Error second leading cause (20%), Glaucoma and Diabetic Retinopathy emerging causes
2007	0.8%	Goal for 10 <sup>th</sup> plan
2010	0.5%	Goal indicated in National Health Policy
2020	0.3%	Goal under "Vision 2020 initiative"

## Current Status

### Extent of the problem

Three major surveys were conducted to find out the prevalence of blindness in the country. As per information available from various studies, there are an estimated 12 million bilaterally blind persons in India with VA<6/60 in the better eye, of which nearly 7 million are with Visual Acuity < 3/60 in the better eye. Recent survey (2001-04) in 25 districts of the country indicated that prevalence of blindness (Visual Acuity <6/60) has come down to 1.1 %.

Main causes of blindness in this population are as follows: -

a	Cataract	62.6%
b	Refractive Error	19.70%
c	Corneal Blindness	0.90%
d	Glaucoma	5.80%
e	Surgical Complication	1.20%
f	Posterior Capsular Opacification	0.90%
g	Posterior Segment Disorder	4.70%
h	Others	4.19%

There are no nation-wide reliable data on refractive error and low-vision among children in the country except some isolated studies. Three districts were surveyed to assess prevalence and causes of blindness and low vision in children below 15 years of age. The survey in Delhi indicated that below one per thousand of child population is blind/visually handicapped. West Bengal and Andhra Pradesh, Childhood Blindness Survey showed childhood prevalence of blindness as 0.51 per thousand and 0.61 per thousand respectively. Estimated National Prevalence of Childhood Blindness /Low Vision is 0.80 per thousand.

Among the emerging causes of blindness, diabetic retinopathy and glaucoma need special mention. 2% of India's population is expected to be diabetic. 20% of diabetics have diabetic retinopathy and this number is likely to grow in future. Prevalence of blindness due to glaucoma is estimated to be 4% in population aged 50 years and above.

India is committed to reduce the burden of avoidable blindness by the year 2020 by adopting strategies advocated for Vision 2020: The Right to Sight.



### Development of Infrastructure (so far):

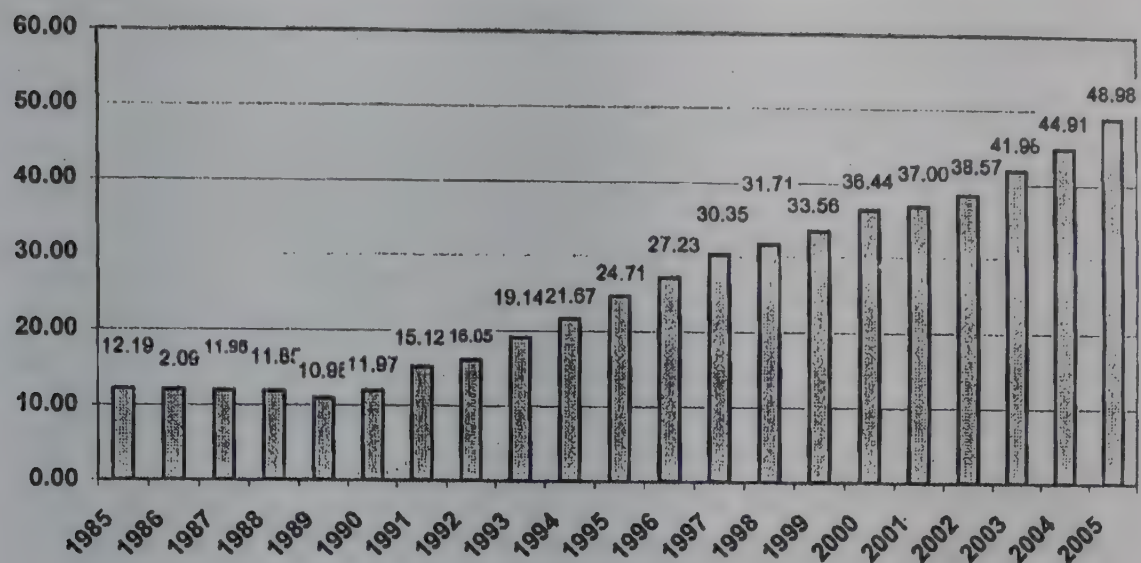
Regional Institutes of Ophthalmology	16	
Upgraded Medical Colleges	105	
Paramedical Ophthalmic Assistants	39	
Training Centers		
Eye Banks	166	
District Hospitals equipped	550	
District Blindness Control Society	590	
Central Mobile Units	80	} Merged with dist. hospitals & Medical Colleges.
District Mobile Units	344	
Primary Health Centers upgraded	5692	
Para Medical Ophthalmic Assistants posted	5692	

### Achievements under the programme so far:

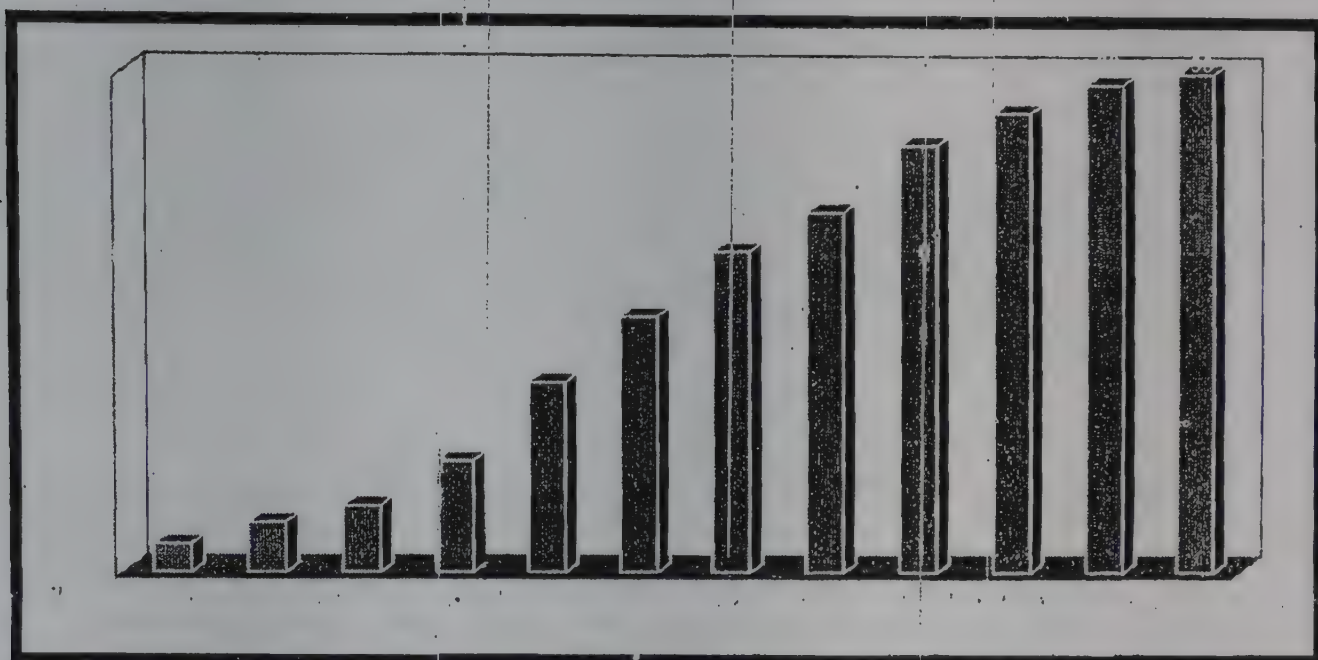
All surveys indicated that cataract is the single largest cause of blindness in India. Controlling cataract blindness was thus given high priority in India. With a view to bring down prevalence of cataract blindness, funds were mobilized from the World Bank during 1994-2002. Assistance was provided to 9 major states, which contributed to 70% country's blind population. Under the project, following have been the achievements:

- ✓ 307 Dedicated eye operation theatres and eye wards in District level hospitals constructed;
- ✓ Supply of Ophthalmic equipments for diagnosis and treatment of common eye disorders, particularly for IOL implantation in all district hospitals.
- ✓ More than 2000 Eye Surgeons trained in IOL surgery.
- ✓ More then 30 NGOs assisted for setting up/expanding eye care facilities;
- ✓ The volume of cataract surgery has steadily increased since 1993. Currently, Cataract Surgery Rate is 4500 per million populations. There has been a significant increase in proportion of cataract surgeries with IOL implantation from <5 % in 1994 to 90% in 2005-06.
- ✓ There has also been an increase in coverage of eye care services. Rapid Assessment survey carried out in 12 districts in 2001-02 indicated coverage of 70% of cataract blind persons having utilized eye care services.
- ✓ Recent survey have confirmed higher success rate following cataract surgery with Intra Ocular Lens implantation as compared to conventional surgery. Follow up of operated cases was an important factor in those cases who had poor visual outcome following cataract surgery.

## Performance of Cataract Surgery-1985-2005 {In Lakhs}



## Percentage Of Cataract Operations With Iol Implantation:1993-2005 (%)



## Achievements during 10<sup>th</sup> Plan

**Performance of Cataract Surgery:** has been steadily increasing as indicated below:

Year	Target	Achievement	% Surgery with IOL
2002-03	4000000	3857133	77
2003-04	4000000	4197609	83
2004-05	4240000	4491154	88
2005-06	4513000	4898444	90



## School Eye Screening programme

Year	Teachers Trained	School Children Screened	Children Detected with Refractive Errors	Poor Children provided free glasses
2002-03	35,267	97,36,805	5,06,663	98,697
2003-04	88,317	1,92,60,984	5,52,963	1,84,305
2004-05	97,310	2,68,62,932	5,72,691	2,83,070
2005-06	1,24,981	2,94,73,371	7,26,803	3,50,048

## Donated Eyes Collected

Year	Total No. of Eyes Collected
2003-04	23,741
2004-05	23,553
2005-06	25,978

Collection and Utilization of donated eyes: Currently, nearly twenty five thousand donated eyes are collected per annum in India. Hospital retrieval programme is the main strategy for collection of donated eyes, which envisages motivation of relatives of terminally ill patients, accident victims and others with grave diseases to donate eyes. Eye donation fortnight is organized from 25<sup>th</sup> August to 8th September every year to promote eye donation/eye banking. Gujarat, Tamilnadu, Maharashtra and Andhra Pradesh are leading States in this activity.

## Training of Ophthalmic Surgeons:

Year	Nos.
2002-2003	176
2003-2004	229
2004-2005	350
2005-2006	250
Total	1005

## IEC Activities:

IEC activities are undertaken at Central, State and DBCS level. At Central Level, various media are utilized to create awareness amongst the masses about Cataract, Refractive Error, Eye Donation, Childhood Blindness, Glaucoma, Diabetic Retinopathy etc.

### Central IEC activities are:-

1. Broadcasting of Radio spots/Jingles in the Radio Programmes through AIR.

2. Telecasting of TV spots through Doordarshan, Prasar Bharti, Satellite Channels etc.
3. Advertisements through other media like Railway, Postal Stationery etc.
4. Prototype IEC material in the form of Printed Education materials, Leaflets, Posters, and Publications etc.
5. IEC messages on Eye Care through Websites.
6. Interpersonal Communication through Health workers, ASHA, School Teachers, Media People and other Govt. NGO and private functionaries.
7. Printing of Guidelines and training manuals.

Special campaigns for mass awareness were undertaken every year during Eye Donation fortnight (25th August to 8th September) and World Sight Day (2nd Thursday of October). A quarterly newsletter has been started since July 2002. During 11<sup>th</sup> plan these activities will be intensified to create more awareness in the public.

### **Support to Voluntary organizations:**

Voluntary Organizations play an important role in implementing various activities under the programme. District Blindness Control Societies (DBCS) have been established throughout the country under the Chairmanship of District Collector/Deputy Commissioner. Till date, 590 DBCSs have been established. Under the scheme of non-recurring grant a maximum of Rs.25.00 lakhs was granted for expansion/up gradation of Eye Care Units for tribal and backward rural areas. So far, 54 NGOs have been assisted under this scheme since 1996-97. Till date 24 eye banks in voluntary sector were assisted to promote collection of donated eyes.

### **Decentralized Approach**

India is a vast country having 28 states and 7 union territories with 600 districts with an average population of nearly 2 million per district. The programme implementation has been decentralized up to the state and district level where State Blindness Control Societies (SBCS) and District Blindness Control Societies (DBCS) have been set up as the nodal agencies. Members of the SBCS and DBCS include officials from State and District Administration, Health, Education and Social Welfare Departments, Media, Community Leaders and NGOs /Private Sectors involved in Eye Care etc. The concept is to establish a bottom up approach in dealing with blindness through multi-sectoral and coordinated efforts. These societies in the district are responsible for identifying the blind in every village; organizing diagnostic screening camps at suitable locations; arranging transportation of patients to the designated facilities and ensure follow up etc.

### **Monitoring & Evaluation**

Following tools have been developed for effective monitoring of the programme:



- ✓ Standard prototypes for reporting of performance and expenditure by State and District Blindness Control Societies;
- ✓ Standard Cataract Surgery record & Patients Discharge Cards;
- ✓ Standard referral cards for children having refractive errors.
- ✓ Specific software to facilitate computerized MIS at various level.
- ✓ Sentinel Surveillance Units (25) have been set up in the Department of Ophthalmology and Preventive and Social Medicine in Medical Colleges for assessment of Beneficiary profile, visual outcomes based on Cataract surgical records and follow up of a sub-sample of operated cases to assess visual outcomes. Ocular Morbidity data are also collected to assess pattern and trend of eye diseases.
- ✓ Independent studies were done to evaluate the programme activities. These include:

- Communication needs assessment.
- Beneficiary assessment.
- Evaluation of trained eye surgeons.
- Rapid assessment for prevalence of blindness, coverage and outcome.
- Epidemiological survey on blindness in 50+ populations in 15 districts.
- Evaluation of NGO assistance under NPCB.

### Quality of Services

In order to bring out an improvement in the quality of services, substantial efforts have been made by discouraging outdoor surgical camps; emphasis on IOL implantation on institutional level and greater coverage for women and underprivileged sections of the society etc. There are many Centers of Excellence at the tertiary level in Govt. NGO and Private Sector to take care of other eye diseases and undertaking specialized procedures in eye care.

### Budget Allocation / Expenditure during 10th Plan.

(Rs. in crore)

Year	Budget (FE)	Allocated	Expenditure
2002-03	85.00		84.62
2003-04	86.00		85.62
2004-05	88.00		87.31
2005-06	93.32		92.84
2006-07	90.00		28.00

With the closure of the World Bank Project, the programme is being sustained mainly through domestic budget for which an allocation of Rs.445 crore has been made in the 10th Plan.

## **Constraints**

### **Inequitable distribution of Eye Surgeons**

There are an estimated 12,000 Eye Surgeons in India for more than 1 billion population with an average of ratio of 1 surgeon for about 1,00,000 population. However, there is wide disparity between urban and rural areas. eye surgeons population ratio varies from 1:20,000 in urban area to 1 in 2,50,000 in rural areas. This disparity has led to significant differences in services offered/sought by the public.

### **Sub-Optimal Utilization of Human Resources**

It is estimated that about 40% qualified eye surgeons in Government section are non-operating surgeons. They are either practicing medical ophthalmology/refraction services or providing general medical care. Out of 3000 eye surgeons in Government sector nearly 700-800 are on administrative positions or are working as Medical Officers at PHCs / CHCs.

### **Inadequate number of paramedical eye care personnel**

While desired eye surgeons- paramedic ratio should be 1:3 to 1:4 there are less number of qualified paramedics as compared to eye surgeons. The surgeon therefore have to sometime perform job like refraction , pre-operative care and undertaking diagnosis tests, which should generally be carried out by paramedical personnel.

### **Sub Optical Coverage**

Government facilities, NGO and private sector are usually located in urban/peri urban areas. Geo-physically remote and socio-economically backward population remain underserved.

### **Over-emphasis on Cataract**

Cataract intervention is given the highest priority attention under the National Programme for Control of Blindness and the problem of Corneal of Blindness and the problem of Corneal Blindness. Glaucoma and Diabetic Retinopathy have not been adequately addressed. Similarly Pediatric Ophthalmology and low vision have also received a lower priority. Skills required to diagnose and manage these problems need to be acquired during residency. These sub-specialties are available only at a few tertiary level institutions.

### **Lack of Public Awareness**

Rural, illiterate and under privileged population are not fully aware about various intervention that are available to restore vision of the blind. Integration with primary health care is also limited and therefore rural health workers are not motivating potential beneficiaries.



## **Major Challenges In part of NPCB**

- In depth study of epidemiology of Blindness.
- Comprehensive Eye Care programme.
- Reaching the underserved population.
- Development of sustainable infrastructure.
- Technological advancement in Eye Care.
- Human Resource Development to meet future challenges.
- Quality of services & outcome.

## **Strategies and Outcome during 11<sup>th</sup> Plan**

### **a. Strengthening Advocacy**

- Motivation and involvement of Village Panchayats, locally elected bodies, grass root NGO's, women groups, formal and non formal leaders and other active community leaders would be necessary for enhancing coverage in the under served areas;
- Introduction of topics in school curricula including basic tips on eye care, incorporating eye care in school books and comprehensive health check ups including eye check up should be made mandatory at school entry with due certification will strengthen services for detection and correction of refractive errors;
- Distance education modules will be prepared for para medical professionals in consultation with IGNOU.
- Grief counseling involving volunteers, forensic departments, police etc. and strengthening of hospital corneal retrieval programme for eye donation.

### **Human Resource Development (HRD)**

To bring in uniformity in HRC, some initiatives that are proposed to be examined for implementation are as below:

- Ophthalmology should be treated as a separate subject in MBBS, During internship, two weeks of posting in community eye care programmes, in association with Community Medicine posting would orient students in understanding programmes initiatives. Emphasis should be laid on training in fundus examination and tonometry at undergraduate level;
- Uniform curriculum and assessment during MS/MD courses including assessment of skills, maintenance of log-book (minimum 50 IOL microsurgical operations of reasonable quality during postgraduate training) and evaluation of the capacity of the existing PG training centers is advocate. Training of postgraduates of ophthalmology, in indirect ophthalmoscopy, slit lamp examination, gonioscopy, applanation-tonometry, Visual field charting, Laser Techniques, fundus biomicroscopy etc. is recommended;
- CME for ophthalmologists in IOL technique including SICS/Phaco Emulsification, Glaucoma, Paediatric Ophthalmology, Laser Techniques

Keratoplasty, Medical Retina, Vitreo Retinal Surgery, Low Vision Aids etc. should be continued to develop required skills in the existing surgeons.

- There is a need to increase the capacity of the country to produce more para-medical eye care personnel so that a minimum Eye Surgeons/Paramedic Ratio of 1.3 is maintained.

#### **Infrastructure Development.**

- Dedicated eye operation theater and eye wards is needed at service centers for each 5,00,000-10,00,000 population. This will ensure reach in approach universally. Service centers may preferably be located in towns with population above 50,000 so that long term sustainability could be ensured.
- Strengthening of R.O.s & Medical Colleges is to be continued to enhance their capacity to provide services as well as training. Provision of equipments like indirect ophthalmoscope, A scan and B scan, Yag Lasers, Retinal Lasers, fluorescein angiogram, automated perimeters and equipments for setting up pediatric ophthalmology units and low vision centers should be made, so that comprehensive eye care is available in the Medical Colleges and R.O.s.
- Provision of equipment like Operating Microscope, Keratometer, A Scan Biometer slit lamps, direct ophthalmoscopes and gonioscopes and YAG Lasers etc should continue to be made at district level hospitals.

#### **Grant-in-aid to State Blindness Control Societies and District Blindness Control Societies**

**1.Manpower :** for salary support for Ophthalmic Surgeons, Ophthalmic Assistants, approved posts of State Ophthalmic Cell and State Health Society (National Programme for Control of Blindness) etc.

**2. For procurement** of Ophthalmic equipments, office equipments, consumables required for comprehensive Eye Care, maintenance of equipments, vehicles etc.

**3.Construction** of dedicated Operation Theaters and Eye Wards in district Hospitals in NE states, Bihar, Jharkhand, J&K, Himachal Pradesh, Uttaranchal and few other states as per demand.

**4. Financial assistance to NGOs and Govt. Eye Care Units for services delivery:-**

- Non-Recurring grant-in-aid up to Rs. 50 lakh on a 1:1 sharing basis for expansion / up gradation of Eye Care Units for underserved population for comprehensive eye care.
- Non-Recurring grant-in-aid up to Rs. 15 lakh for strengthening of Eye Banks.
- Non-Recurring grant-in-aid up to Rs.1 lakh for strengthening of Eye Donation Centers.



- Non-Recurring grant-in-aid upto Rs.50,000 for setting up / strengthening Vision Centers.
- Recurring grant-in-aid for free Eye Operations in Hospitals @ Rs. 750 per IOL implantation/SICS/PHACO and Rs. 1000 per case for other Eye Surgeries and for North Eastern States, Hilly States and Desert Areas Rs. 850 per IOL Implantation/SICS/Phaco and Rs. 1100 per case for other Eye Care Management.
- Recurring grant-in-aid to Eye Banks and Eye Donation Centres @ Rs. 2000 per pair of eyes for Eye Banks and @ Rs.1000 per pair of eyes for Eye Donation Centres.
- Appointment of Eye Donation Counselors on contract basis in Eye Banks.

### **Involvement of Private Practitioners**

The Private Practitioners are to be involved in the sub district, block and village level especially in those Districts where there are very few eye care facilities {to be identified District Blindness Control Societies}. GIA is to be given @ Rs. 750/- per case for IOL Implantation, Rs. 1000/- per case for management of other eye diseases like Glaucoma, Diabetic Retinopathy, Corneal Transplantation, and Childhood Blindness etc for North Eastern, Hilly and Desert Areas Rs. 850 per IOL Implantation/SICS/Phaco and Rs. 1100 per case for other Eye Care Management.

### **Information Education Communication**

**Central Level:** planning, monitoring and evaluation of IEC, guidelines to States and DBCSs for strategies related to IEC. Guidelines, training, manuals and other prototype material produced, tested and circulated, Publication of newsletters, operations research related to IEC.

**State level:** IEC strategy developed in various regions of the State, replication of effective prototype, monitoring of district level IEC activities.

**District level:** Local IEC suitable to target population, use of folk methods and other indigenous means of communication. Orientation of local leaders etc.

### **Management Information System, Monitoring and Evaluation**

**Central Level:** Guidelines and standard formats produced and circulated. Development of software, training of MIS staff and conduct of beneficiary assessment and evaluation surveys. Monitoring of performance and expenditure by States and DBCSs.

**State Level:** Cost for supply of hardware and software to States. Maintenance and operational expenses out of recurring assistance to SBCS. Data entry and analysis of performance and expenditure on various components.

**District level:** Compilation of data from various performing units in standard records, reporting of performance and expenditure to States and Central Cell, monitoring of performance in various blocks. Support to Sentinel Surveillance

Units for monitoring of ocular morbidity, studying profile of beneficiaries and undertaking Rapid Survey,

**Evaluation:** A plan of action would be prepared to evaluate schemes for school children, rural woman and under-served areas. The survey will also evaluate functioning of Government fixed facilities, grantee NGOs and trends in prevalence of blindness.

### **Support to VISION 2020 Secretariat**

It is proposed to support VISION 2020 Secretariat for monitoring and other Eye Care Activities for monitoring and other Eye Care activities.

### **Training of Ophthalmic and Support Manpower:**

The following training programmes will be organized as per the approved financial norms:

- Training of eye surgeons in identified institutes in ECCE/Intra Ocular Lens Implantation surgery, SICS, Phaco Emulsification, Low Vision Services, Glaucoma, Pediatric Ophthalmology, Indirect Ophthalmology and Laser Techniques, Vitreo Retinal Surgeries, Eye Banking and Corneal Transplantation Surgery etc. training of eye surgeon would not exceed Rs. 50,000/- per trainee.
- Training of District Programme Managers
- Training in Ophthalmic Nursing
- Refresher training of PHC-MOs & PMOs, PMOAs, Refractionist, Optometrist, Ophthalmic Technicians, OT Technicians, Nurses, ASHAs etc.
- Training of Ophthalmic Assistants in Medical Colleges.
- Training of Health Workers, MPWs, Link Workers, ASHA etc.
- Pediatric Eye Care Training Team like Eye Surgeons, Pediatrician and Anesthetist to take care of Childhood Blindness.
- Guidelines and curriculum for various training courses would be organized by the Central Cell.

### **Development of Infrastructure In NE States Under NPCB During 11<sup>th</sup> Five Year Plan**

#### **A. Magnitude of Blindness**

As per the Survey 2003, prevalence of blindness and estimated number of blind persons in NE States are given below:-



State Name	Census population (2001)	Prevalence of Blindness% (2003 rapid Survey)	Estimated Blind Persons (In Lakhs)
Arunachal Pradesh	10.91	2.28	0.13
Assam	266.38	3.05	3.57
Manipur	23.88	1.38	0.16
Meghalaya	23.06	0.74	0.05
Mizoram	8.91	0.78	0.06
Nagaland	19.88	1.05	0.08
Sikkim	5.40	0.65	0.02
Tripura	31.91	0.77	0.38

## B. Eye Care Infrastructure

There is a Regional Institute of Ophthalmology at Guwahati and 4 upgraded Medical Colleges in the region. Eye Care infrastructure is weak in NE Region, particularly in Assam. Number of Eye Surgeons are also inadequate. Very few Non-Government organizations are located in the region. There are only 3 Eye Banks in Assam and none in any other NE State.

States	RIO	Upgraded Med.COL.	Upgraded District Hospital	DBCS	Mobile Eye Care Unit	Eye Bank	Upgraded PHC's
Arunachal Pradesh	0	0	3	4	7	0	15
Assam	1	3	10	23	5	3	200
Manipur	0	1	6	4	4	0	16
Meghalaya	0	0	5	6	4	0	11
Mizoram	0	0	3	4	3	0	20
Nagaland	0	0	3	2	1	0	17
Sikkim	0	0	1	0	4	0	8
Tripura	0	0	4	4	5	0	29

Performance of Cataract Surgery during X Plan Performance is low in all States of the region except Tripura. Assam is one of the lowest performing states in the country with low Cataract Surgery Rate (Table 1)

**Table 1: Performance of Cataract Operations in NE Region**

State	2002-03		2003-04		2004-05		2005-06*	
	Tar.	Ach.	Tar.	Ach.	Tar.	Ach.	Tar.	Ach.
Arunachal Pradesh	1000	532	1000	664	1000	776	1000	869
Assam	45000	20889	45000	23063	45000	23500	45000	47100
Manipur	2000	722	2000	553	2000	604	1000	1014
Meghalaya	2000	824	2000	1283	2000	827	2000	1292
Mizoram	800	733	800	796	800	859	1000	1211
Nagaland	500	400	500	429	500	450	500	741
Sikkim	1000	376	1000	253	1000	241	500	351
Tripura	8000	8270	8000	8098	8000	5186	8000	5136
Total	60300	32746	60300	35139	60300	32443	59000	57714

The process of procurement and supply of Ophthalmic Equipments has been decentralized through State Blindness Control Societies of the concerned States from the year 2005-06. A sum of Rs. 86,16,500/-including Rs 28,40,000/-to Assam, has been released to NE States for procurement of Ophthalmic Equipments. Balance requirement for Ophthalmic Equipments of NE States will be met during the current financial year.

### **Major Targets for NE States during 11<sup>th</sup> Plan**

**A. Special Drive For Comprehensive Eye Care Programme Activities Including Cataract, School Eye, Screening, lec, Diabetic Retinopathy Screening And Management, Glaucoma Management, Childhood Diseases And Corneal Transplantation etc.**

To make the drive a success, Eye Surgeons from reputed institutions like Dr. R.P. Center, New Delhi, Venue Eye Hospital, New Delhi and Aravind Eye Hospital; Madurai (TN) etc. have been deputed in NE States for Cataract Surgeries and Other Eye Care. Around 20,000 cataract surgeries have been performed during the 1st three phases of the drive.

It has been decided to continue the drive during the year 2006-07 also so as to clear cataract backlog from NE States.

### **B. Construction of OT's and Eye Wards**

It has been proposed to construct dedicated Eye OT's and Eye Wards in District Hospitals and Sub District Hospitals in NE States to Strengthen eye care infrastructure under NPCB.

### **C. Ophthalmic Equipments**

Necessary funds will be released in the form of GIA to NE States for procurement of ophthalmic equipments to all Eye Care facilities as per the pattern of assistance.

### **D. Training**

Training of Eye Surgeons, Training of Pediatric Eye Care Team and Para Medical {Ophthalmologist, Pediatrician and Anesthetist} and Para Medical Ophthalmic Staff will also be the priority area under NPCB.

### **E. New Initiatives**

1. A Task Force has been set up to chalk out the strategy for 11th Plan under NPCB.
2. Construction of dedicated Eye Wards and Eye Operation theaters in Districts and Sub Districts Hospitals in North-Eastern States, Bihar,



Jharkhand, J&K, Himachal Pradesh, Uttaranchal and few other States as per demand.

3. Appointment of Ophthalmic Surgeons and Ophthalmic Assistants in new districts in District Hospitals and Sub District Hospitals.
4. Appointment of Ophthalmic Assistants in PHCs/ Vision Centers where there are none (at present ophthalmic assistants are available in block level PHCs only)
5. Appointment of Eye Donation Counsellors on contract basis in Eye Banks under Government Sector and NGO Sector.
6. Grant-in-aid for NGOs for management of other Eye diseases other than Cataract like Diabetic, Retinopathy, Glaucoma Management, Laser Techniques, Corneal Transplantation, Vitreoretinal Surgery, Treatment of childhood blindness etc of Rs. 750 per case for Cataract/IOL Implantation Surgery and Rs.1000 per case of other major Eye Diseases as described above. For North-Eastern States, Hilly and Desert Areas Rs. 850 for Cataract and Rs.1100 for other major Eye Care Management is proposed.
7. Special attention to clear Cataract Backlog and take care of other Eye Health Care Centers from NE States.
8. Telemedicine in Ophthalmology {Eye Care Management Information and Communication Network}
9. Vitamin A supplementation and M.M.R Vaccination through DBCS corpus funds as per requirement to take care of Childhood Blindness.
10. Setting up of five Centers of Excellence for Eye Care Services.
11. Provision of vehicles to state Programme Managers and District Programme Managers under NPCB.
12. Provision of Computers, Fax and Photocopier to District Blindness Control Societies under NPCB.

**Proposed 11<sup>TH</sup> Plan Budget Allocation: - Rs. 1550 Crores**

Year wise allocation is given below:

(Rs. In Crores)	
Year	Allocation
2007-08	250
2008-09	250
2009-10	350
2010-11	350
2011-12	350
<b>TOTAL</b>	<b>1550</b>

### **VISION 2020: The Right to Sight Initiatives**

It is a collaboration between International Agency for prevention of Blindness which represents over 60 International and National organizations involved in blindness control work and the WHO acting on behalf of its 192 member countries.

At the National, Regional level, Vision 2020 has a strong partnership among the Ministry of Health, International and National organizations. Professional bodies, Civil Society group brought together in a national prevention of blindness committee aiming to facilitate the implementation of effective and efficient eye care services in all the districts.

### **Goal**

To intensify and accelerate the present prevention of blindness activities, so as to achieve the goal of eliminating avoidable blindness by the year 2020.

### **Focus Areas**

- ✓ Refractive Error
- ✓ Low Vision
- ✓ Childhood Blindness including Vitamin A deficiency.
- ✓ Corneal Blindness including Trachoma.
- ✓ Emerging Causes, Glaucoma, Diabetic Retinopathy.

India is one of the signatory in this global initiative at WHO General Assembly at Geneva during the year 2003.

### **Eye Care Management Information and Communications Network {Telemedicine}**

India is emerging as a world leader in communications technology. The Indian Space Research Organization offers high bandwidth links for the telemedicine operations. Ministry of Health has launched a telemedicine project called ONCONET to broad base diagnostic evaluation and consultation services for cancer patients.

Eye care Management Information and Communications Network could be developed on the similar lines with the help of NGOs and Technical Agencies,

The purpose of the Eye care Management Information and Communications Network Project is to support access to quality and affordable eye-care services for blindness prevention and sight restoration to underserved population in India. This will be accomplished through a national network of District Blindness Control Societies, Private Hospitals, Regional Institutes of Ophthalmology and Centers of Excellence.

*The eye-care services supported by the network will include blindness surveillance, screening, diagnosis, expert consultations, tele-ophthalmology, promoting surgical expertise and skill development of eye-care professionals.*

The project is designed to bring together the needy population for eye-care services from widely dispersed locations and the expertise for blindness prevention and sight restoration through strategic use of information system and communication technology.



The proposed project is designed to develop a web-based management solutions, communications technology and telemedicine to create a national network for prevention and control of blindness in India. The overall scope of the project to cover the entire country is quite significant with 600 districts to cover. This may involve at least as many private providers of services, 11 Regional Institutes of Ophthalmology and an equal number of centers of excellence over time. The project cost of the project during pilot phase is around Rs.5 crore.

### **Centre of Excellence**

There is a demonstrated need for developing basic infrastructure in order to provide better eye care facilities to public and to ultimately reduce the burden of blindness diseases, although basic health care delivery system provides treatment facilities but specific infrastructure for Eye care diseases needs attention of the policy makers.

There is an approved scheme for the development of infrastructure starting from Vision Centres at PHC level to District Hospitals, Medical Colleges and Regional Institutes of Ophthalmology. Developing Centres of Excellence in the country under NPCB is a step towards this direction in the 11th Five Year Plan.

The Centre of Excellence is a hospital where almost all type of specialty services are available under one roof with highly trained and motivated professionals with the following basic functions:-

1. Advanced care for all complex clinical problems
2. Low Vision and rehabilitation to both adults and children
3. Training to sub-specialists and teachers from the Training Centre
4. Clinical, basic and public health research
5. Training of health care managers and management
6. Assist Government in policy making and program implementation
7. Develop community health models

### **Cost of establishing a Centre of Excellence**

The total cost of Centre of Excellence which includes manpower, civil works, furnishing, furniture, library, Hostel, OT, equipments, various types of laboratory services etc. will be tentatively around Rs.40 crore out of which Rs.10 crore will be borne by the National Programme for Control of Blindness during the 11th Plan. The proposal is to establish 5 Centres of Excellence for which additional provision of Rs.50 crore will be made in NPCB budget during 11th Five Year Plan. A detailed scheme for establishing Centres of Excellence under NPCB in the country during 11th Plan is being worked out separately.

### **Operational Capabilities**

The Programme is 100% centrally sponsored Scheme. Various programme activities are implemented at central, state and district level. Organizations

responsible for programme implementation at various levels are indicated below:-

### Central Level

At the central level, the National Programme Management Cell in Dte.GHS/Deptt. Of Health would be the responsible organization. Three national bodies, namely, the National Blindness Control Board, National Programme Coordination Committee and National Technical Advisory Committee under the chairmanship of Secretary (Health), Additional Secretary and Director General of Health Services respectively would oversee the implementation of the Programme.

### Central Cell

The following Posts need to be continued on the scale of pay fixed by the Pay Commission:-

S.No.	Posts	No.	Scale of Pay/remuneration
1.	Deputy Director General	1	18400-22400
2.	Assistant Director General	1	14300-18000
3	Consultant{BC}	1	26000 {Consolidated}
4.	Health Education Officer	1	8000-13500
5	Section Officer {BC}	1	8000- 13500
6.	Accounts Officer	1	7450- 11500
7.	Statistical Assistant	4	5000-8000
8	Asst/UDC	2	4000-6000
9	Data Entry Operator	3	4500-7000
10	Peon	2	2550-3200

### State Level

The scheme is being implemented through the State Governments. A State Programme Cell is already in place for which five posts including that of a Joint Director (NPCB) have been created. State Blindness control societies are established in all States/UTs with seven support staff to monitor and supervise the District Blindness Control Societies and need to be continued. State Programme Officer is the Member Secretary of the State Society chaired by Health Secretary.

For small States, the sanctioned staff consists a post of Deputy Director and three support staff and a Blindness Control Society with 3 support staff. For efficient management of the programme at the state level, we should continue to support the State Ophthalmic Cell and Blindness Control Society during the 11th Plan.



## District Level

The responsible unit of implementation of the programme at the district level is the District Blindness Control Society (DBCS). It is the DBCS which is responsible for coordinating different agencies and monitoring implementation of the programme by pooling in all the resources available. DBCSs have already been established in all districts. The District Collector/Deputy Commissioner is the Chairman of the DBCS. The support is to be continued in 11<sup>th</sup> Plan.

There is a proposal to create additional posts in the Government sector during the 11th Plan at district level like Eye Surgeons and Ophthalmic Assistant. To carry out functions of District Blindness Control Society, District Programme Manager will be supported by a Data Entry Operator and accounts personnel appointed either on deputation or on contract basis on full time basis.

# **NATIONAL MENTAL HEALTH PROGRAMME**

## **Programme Background including Human Resource Issues**

Severe mental disorders that include schizophrenia, bipolar disorder, organic psychosis and major depression affect nearly 20 per 1000 population. This is a population that needs continuous treatment and regular follow-up attention. Close to ten million severely mentally ill are in our country without a adequate treatment by this estimate. More than half remain never- treated. For example a survey in a taluk revealed that close to 40% of patients of schizophrenia were never treated although a psychiatrist was practicing in that taluk. Even those who seek treatment, a delay of about 20 months occurs before they reach a psychiatrist.

Lack of knowledge on the treatment availability & potential benefits of seeking treatment are important causes for the above. With a large population in our country on one hand and very few psychiatrists being available on the other hand, less than one psychiatrist is available for every 3 lacs population. In contrast, UK has 30-folds higher number of psychiatrists for unit population. Available psychiatrists are mostly located in urban areas. The psychiatrist / population ratio in rural areas that account for 70% of country's population, could well be under one for every million.

### **Existing Infrastructure**

- There are 37 state run mental hospitals, existing in 16 states all over the country.
- About 20,000 psychiatric beds (in mental hospitals & general hospital psychiatric units)
- Out of 18,000 plus mental hospital beds, nearly half are occupied by LSPs (Long Stay Patients)
- Approx. 3500 trained psychiatrist are available in the country

### **NMHP during Ninth Five Year Plan**

- District Mental Health program was implemented in 27 districts.
- Even the modest outlay of Rs 28 crore could not be utilized fully during the plan period.
- A Working group was constituted to understand underperformance & formulate remedial measures for future.

### **NMHP during Tenth Five Year Plan**

- Approved outlay of Rs 190 crore was subsequently reduced to Rs. 139 crore for 10<sup>th</sup> Five Year Plan.
- National Human Rights Commission conducted a review of the functioning of all state run mental health institutions & psychiatric wards in general & medical College hospitals.



- Hon'ble Supreme Court of India has been monitoring the condition of mental health institutions & accordingly passing directions to the State Governments & Central Governments to improve the status of these institutions & health care facilities for the mentally ill patients.

**Main strategies of NMHP during the 10<sup>th</sup> plan period are as follows :**

- Expansion of DMHP to 100 districts all over the country.
- Strengthening and Modernization of Mental Hospitals.
- Up gradation of Psychiatric wings in the General Hospitals/Medical Colleges.
- IEC Activities.
- Research & Training in Mental Health.

### **1. District Mental Health Programme**

It is a community based model mental health services programme based on "Bellary Model", developed by NIMHANS, Bangalore. It now covers 94 districts in 29 States/Union territories all over the country. It's main objective is to provide basic mental health services to the community & to integrate these with other health services.

#### **1.1 Activities under DMHP**

- Training of mental health team at the identified nodal institutions.
- Increase awareness about Mental Health problems.
- Provide service for early detection & treatment Of mental illnesses in the community (OPD/Indoor & follow up)
- Provide valuable data & experience at the level of comm. at the state & center for future planning & improvement in service & research

#### **1.2 Strengthening and Modernisation of Mental Hospitals**

In order to modernize State run Mental Hospitals in the country, a one time grant with a ceiling of Rs. 3 crores on the basis of benchmark of requirements and level of preparedness is being allocated.

#### **1.3 Upgradation of Psychiatric wings in the General Hospitals/Medical Colleges**

Out of the existing medical colleges in the country, 1/3<sup>rd</sup> do not have adequate psychiatric services.

A one time grant of 50 lakh is given for up gradation of infrastructure & equipment. The same is not to be utilized for recurring costs.

#### **1.4 IEC Activities**

For initiation of IEC activities at the National level for a rapid and fruitful awareness programme, an amount of Rs. 10 crore has been earmarked.

## 1.5 Research & Training

A nominal amount of Rs. 5 crore has been envisaged for research in select areas to have a direct bearing on improvement of operational aspects of Mental health Programme. It also has provision for updating of Manuals for training of doctors & health workers.

### Technical support to NMHP

Following are three main resource centers for providing technical inputs & training under NMHP :

- NIMHANS (Bangalore)
- CIP (Ranchi)
- IHBAS (Delhi)

### Expenditure during tenth Plan

2002-03	Rs. 5.14 lakhs
2003-04	Rs. 492.32 lakhs
2004-05	1938.63 lakhs
2005-06	Rs. 4580.00 lakhs (against allocation of Rs. 40 crore)
2006-07	Rs. 1291.12 lakhs (against allocation of Rs. 50 crore)

### Activities undertaken during 10<sup>th</sup> Plan – Target Achievement

• Districts covered under DMHP	94
• Psychiatric wards of Medical Colleges upgraded	24
• Mental Hospitals strengthened	19
• IEC activities	11.00 lakhs
• Research proposals	45.91 lakhs

### Barriers to Implementation of the Programme

- Inadequate funding for mental health, which remains a relatively low priority area.
- Shortage of trained manpower in the field of psychiatry.
- Social stigma & lack of knowledge of psychiatric patients & their families.
- Negative attitude of General Practitioners, primary care physicians & other specialists.
- NGOs/Voluntary Organizations do not find this field attractive owing to what they regard "excessive" demands made by patients.
- Inadequate staff & infrastructure of mental hospitals and psychiatric wings of medical colleges.
- Uneven distribution of spare resources limiting the availability of mental health care to those living in urban areas.



## **NMHP Issues and challenges**

- Strengthening of DMHP & enhance its visibility at grass root level.
- Filling up manpower gap in the field of psychiatry in general & DMHP in particular.
- Harnessing NGO's help in the Community Based care of mentally ill.
- Focusing on preventive & promotive components of Mental Health in addition to treatment of serious mental ailments.
- Strengthening the IEC activities particularly in the School Health Programme.
- Training of general practitioners in Mental Health Programme.
- Need to develop the urban Mental Health Programme.
- Development of standardized training manuals for doctors and health care workers.

## **Identified thrust areas identified based on experience gained during 10<sup>th</sup> Five Year Plan**

- To expand DMHP in an enlarged & more effective form.
- Streamlining/modernization of mental hospitals in order to modify their present, largely custodial role.
- Upgrading Departments of psychiatry in Medical Colleges & enhancing the psychiatric content of the medical curriculum at the UG/PG level.
- IEC Activities.
- Research & Training in Mental Health.
- School Mental Health Programme.
- Involvement of NGO's in Community Based care of mentally ill patients.

Based on the above, a revised National Mental Health Programme to be implemented during 11<sup>th</sup> Five Year Plan is proposed as follows:

### **Objectives**

1. The need is therefore to empower the primary care doctor to be able to offer care to these patients at PHC's
2. There is a need to improve public awareness and facilitate community participation.
3. The Psychiatry departments of Medical colleges have to be upgraded to enhance better training opportunities
4. Mental hospitals that offer tertiary care to be improved to make treatment acceptable to patients.

### **Targets & Indicators**

- a) number of districts that have successfully implemented the DMHP
- b) improvement in the service care in mental hospitals,
- c) lowering of stigma and,
- d) increased awareness of mental disorders.

## Strategies

1. Integrating mental health with primary care through NMHP
2. Providing of tertiary care institutions for treatment of mental disorders.
3. Eradicating stigmatization of mentally ill patients and protecting their rights through regulatory institutions like central and state mental health authorities.

**Based on the strategies, the following components of Revised NMHP are proposed as below**

**1. Expansion of District Mental Health Programme to 500 districts all over the country.** Some modifications on the DMHP are under way in the light of the review reports of previous programmes. The cost of the DMHP per district may be increased to 1.60 crores per district. Apart from continuing the existing programmes in this five-year plan it is envisaged that 500 more districts will be brought under DMHP activities.

**2. Improvement in health manpower status:** In the earlier plan, money was allocated to improve mental hospitals. Money was also given to improve the departments of Psychiatry in medical colleges. The country is facing an acute shortage of psychiatrists. There is a need to develop PG training activity as well as short-term training (certificate courses) in Psychiatry. In the next plan it is proposed to facilitate 50 MD seats, 25 DPM seats in the teaching colleges. In addition, there is a need to train 5000 taluk level medical doctors for a period of 6 months to 1 year as a part of a certificate course. Medical colleges may use the mental hospitals in their state / district to develop training programmes as well as seek financial support that may include staff under the infrastructure. Medical colleges can put a proposal for starting additional PG training courses (MD: DPM: certificate course = 2:1:20). For each such proposal of 1 unit (2:1:20) a budget of Rs. one crore for the next five years may be allotted. For colleges already having PG courses this grant may be allowed for enhancement of PG seats. A total of Rs. 100 crores under this head may be sought.

### **3. Improving the functioning of psychiatry wings of general hospitals and medical colleges**

Through a one time grant of Rs. 1 crore for up gradation of infrastructure & equipment. It would cover.

- Construction of new ward/Psychiatric OPD block
- Repair of existing ward
- Procurement of hospital furniture
- Equipment

Rs. 1 crore (per Medical college) X 50 = 50 crore may be allocated for this activity.

### **4. Improving the infrastructure in existing mental hospitals in the Government sector - As per the directions of Hon'ble Supreme Court of India**



and observations made by National Human Rights Commission, infrastructural support has been provided to the mental hospitals all over the country. Mental Hospitals, which have not been funded in the 10<sup>th</sup> Plan, for strengthening of infrastructure, a one time grant with a ceiling of Rs. 5.00 crore is proposed. A total of 90 crore may be allocated for this.

**5. Increased thrust on IEC and awareness creation** - in order to dispel myths and prejudices related to mental illness. IEC activities: Under this head, following issues required to be addressed. A budget to Rs.25 crores may be allocated of which 10 crores may be spent in the 1<sup>st</sup> year for the development of these products.

- a. Development of public awareness material as video clippings, posters radio wordings. Projects may be awarded for developing such material with an incentive of a cash prize for the best product. Scientific methods to evaluate the impacts of these on the public have to be initiated.
- b. Training material for under graduate / post graduate training in the form of video, inter active CD for use on the net / distant education have to be developed.
- c. School mental health programmes to be expanded in all districts.

**6. Promoting relevant research**, with emphasis on community based projects, in order to facilitate more effective public health interventions in the field of mental health. This may occur under following headings:

- Biology of mental disorders;
- Early intervention for mental disorders.
- Improving long term outcomes in drug and alcohol
- Social factors / support systems to lower disability in comic psychosis.
- Health behaviour research

**7. School Mental Health Programme** – detailed Model is to be worked out by NIMHANS, Bangalore, taking in view the existing models of School Mental health Programme.

**8. Involvement of NGO's in Community Based Care** of mentally ill patients- detailed Model is to be worked out by NIMHANS, Bangalore.

**Total project cost during the 11<sup>th</sup> Five Year Plan**

S No.	Component	Cost (in crores)
1.	DMHP	800
2.	Improvement of Health Manpower in psychiatry	100
3.	Strengthening of Psychiatry Departments of medical colleges	50
4.	Support for Mental Hospitals	90
5.	IEC Activities	20
6.	Research & Training	20
7.	School Mental Health Programme	5
8.	Support to NGOs for community based care	5
	<b>Total</b>	<b>940</b>

## DRUG DE-ADDICTION PROGRAMME

The basic role of the Ministry of Health and Family Welfare in the area of drug de-addiction is demand reduction by way of providing treatment services including preventive health and after care. The Drug De-addiction Programme of the Ministry was started in 1987-88 with the establishment of 6 De-addiction Centres in Central Institutions viz. AIIMS, New Delhi, Dr. RML Hospital, New Delhi, Lady Hardinge Medical College & Smt. S.K. Hospital, New Delhi, JIPMER, Pondicherry, PGI, Chandigarh and NIMHANS, Bangalore. The Ministry restructured this programme in 1992-93.

Under the Present programme Rs.8.00 lakhs is provided to Medical Colleges/District Hospitals in the States for construction of a building for establishment of Drug De-addiction Centres. One of the essential requirements of the Scheme is that the State Government shall provide necessary land and also meet the recurring expenses towards staff, medical care, diet, maintenance etc.

For North Eastern States there is an additional assistance @ Rs.2.00 lakh per year per Centre for medicine, linen, watch/ward etc.

The Government of India Ministry of Health and Family Welfare have so far established 123 Drug De-addiction Centres including six centres established in Central Hospitals/Institutions out of which 43 are in the North Eastern States.

### Financial outlays

This is an ongoing Scheme and the year-wise outlay approved by the Planning Commission for 10<sup>th</sup> Plan Period is as under:

Year	2002-03	2003-04	2004-05	2005-06	2006-07	Total
Rs. in Crore	7.00	6.50	6.50	6.50	6.50	33.00
Exp. percentage	100%	100%	100%	100%		

### The Objective of the Programme

1. Demand Reduction by providing treatment services including Preventive health care and after care.
2. To develop human resources for providing treatment to addicts.
3. To improve quality of services and delivery.
4. To secure participations of the local govt. body/Institution.

### Target of the 10<sup>th</sup> Plan

1. Review/Evaluation of the Drug de-addiction centres of country.
2. Independent building for National Drug Dependence Treatment Centre.
3. Up gradation of Drug De-addiction Centre at PGI and NIMHANS.
4. Opening of new De-addiction Centre at in the states.



5. Convergence between Drug De-addiction Programme of MOHFW and MOSJ & E.

### Achievements

1. In order to have optimum utilization of the infrastructure and services available in the North Eastern States, convergence between the Programme of the two Ministries viz. Ministry of Social Justice & Empowerment (who are dealing with NGO sector and Ministry of Health & Family Welfare dealing with Government Sector) have been developed by treatment of the serious cases of NGO-run centres in the government's Drug de-addiction centres. Similarly the patients of Government De-addiction may refer to NGO's Centre, who needs to go for rehabilitation and counseling.
2. Earlier the National Drug Dependence Treatment Centre was situated in Din Dayal Hospital on rent basis. During 10<sup>th</sup> Plan a new building has been constructed at Gaziabad with ultra modern facilities.
3. The Drug De-addiction centre of NIMHANS and PGI, Chandigarh has been upgraded up to 30 beds with the ultra modern facilities.
4. Approximately 19 new centres opened all over the country including North Eastern States.
5. Approximately 800 Doctors and paramedical have been trained.
6. Evaluation study of 104 drug de-addiction was carried out by National Drug Dependence

Treatment Centre and the evaluation Team noted the following:

- Out of 104 centres studied, only about 40 per cent were functional and the remaining 60 per cent (N=61) were non-functional. However, 34 out of these 61 "non-functional" centres did provide De addiction services in a limited way as a part of Psychiatric Care/General Medical Services.
- The grant for construction of the building (De addiction Centre) was felt inadequate by many.
- Only 14 (about 13 per cent) De addiction Centres were found to be functional optimally.
- Among the functioning centres, most were providing out patient and in-patient services. However, only a minority was involved in providing community based treatment.
- Patients load in many centres was low.
- Many centres did not dispense any medicines to the patients attending the hospital.
- The staff present in most of these centres (responsible for delivery of care) was grossly inadequate.
- It was noticed that only 21 centres (about 20 per cent) had trained medical doctors. Very few centres had trained nurse.

- Almost all the centres except the centres in North Eastern states, had no source of recurring grant. Thus resources were very limited and the activities undertaken were meager. This was the single most important reason for poor functioning of these centres.

It was found most of the centres are not optimally functional (some are non-functional) due to lack of financial support from the state governments. Most of these centres do not have staff, trained manpower and resources to carry on with the activities. Regular Monitoring and evaluation of the programme by the control of state government has also been lacking.

Based on the recommendations made by the Evaluation Study Report the need for revision of the ongoing scheme has been felt and a draft-revised scheme has been prepared.

The aim of the revised scheme is to reduce the health costs and social cost due to drug abuse and to promote a drug free healthy life style. The major modification of the scheme is as under:

1. Under the revised scheme focus would be on strengthening of existing centres situated at medical colleges and hospitals in a phased manner.
2. Parameters of monitoring & evaluation would be adopted for proper monitoring and evaluation
3. Recurring grant to all drug De-addiction Centres would be enhanced from R. 2/-lakh to 5/-lakh and construction grant would be enhanced from r. 8/-lakh to 12/lakh.
4. Focus would be given on training of doctors, trainers and paramedical under the supervision of National Centres and Regional Centres.
5. OPD and community based services, psychological intervention in overall treatment package along with medical (pharmacological) interventions and regular monitoring would be kept.
6. The National Centers and Regional Centres would be actively involved in planning, overseeing, execution, monitoring and treatment methods etc.

If the revised scheme were put to implementation from 1.04 2007, the financial liability, year-wise for the Eleventh Plan would be: -

Year	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Rs. in Crore	11.49	12.79	16.39	17.09	17.74	75.50

### New Initiatives

1. A project on buprenorphine maintenance Programme has been launched by NDDTC, AIIMS with the support of United Nation Office on Drug and crime (UNDOC). The issue of alleged misuse of Proxyvon or similar drug formulation has been taken up with all the State Drug Controllers of North East States in order to ensure strict enforcement under the provision of drugs and Cosmetic



Rules, as the drug is under schedule 'H' (Prescription Drug) of the Drug & Cosmetics Act.

2. **Palliative care:** involves providing relief from pain and other symptoms and also improving the quality of life in patients with remote chance of cure. Analgesics are the mainstay of cancer pain, management and opioid analgesics like morphine are the commonest drugs used for pain relief. As per the WHO Stepladder pattern for prescription of analgesics, the dosage of analgesics should be tailored to the patient with there being no "right dose" for a patient.

7. **Morphine:** Non-Availability of Morphine is one of the key reasons for patients not receiving morphine for pain relief. The department of Revenue in 1998 has already asked all state governments and UTs to amend and simplify their narcotic regulations to ease access to oral morphine for those in need. Ministry of Health & Others has taken various steps to make the easy availability of morphine in the country to meet the requirements of patients suffering from pain in terminal stages of Cancer. A Model simplified procedure to recognize pain and palliative care organization for possession use and distribution has been circulated to the States. In spite of steps taken to make easy availability of Morphine the Chemists stopped stocking this drug due to the cumbersome procedures under NDPS Rules to stock and sell this drug. Doctors have also stopped prescribing Morphine to their patients because of difficulties faced by patients in procuring this drug. Several steps have been taken at this end to facilitate easy availability of Morphine to the patients suffering from terminal stages of cancer, it would be feasible if the Ministry of health at their level write to the Secretary (Health) of all the States or DGHS write, to his counterparts in the States to sensitize the Doctors to propagate the use of Morphine.

Then the estimated requirement of funds will be= 1,40,000 subcentres x 4 kits x 5 years x Rs 15 per kit=420.00 lakhs + Rs 2.32 x 4 kits x 5 years x Rs 15=696.00 lakhs Total requirement=1116.00 lakhs.

#### **IV Training Programme**

So far the Directorate General of Health Services have been conducting Training programme in the management of NIDDCP for the State level Programme Officers/Technical Officer as well as in the management of IDD monitoring Labs for the Lab Technicians at the State level. In the 11<sup>th</sup> Plan it is proposed to include the training component under NIDDCP so as to cover District level functionaries also within the ambit of Training.

These Training programmes will be conducted on a quarterly basis in collaboration with NIHFW/ NICD in batches of 30 participants each. The TA/DA shall be met from the programme funds. A tentative provision of Rs 5.00 crores has been proposed for the same.

#### **V. Production and Distribution of Iodated Salt-**

The Annual production of Iodated salt has almost reached the target of 50.00 lakh MT during 2005-06. The Salt Commissioner has been assigned the responsibility for production and quality control of Iodated salt at the production level. Accordingly 9 Laboratories have been functioning at various salt production centres. It is proposed to strengthen these labs through revival of the vacant sanctioned posts of lab personnel that during the 11<sup>th</sup> Plan period. A tentative provision of Rs 2.00 crores per annum is proposed to meet the salaries of the existing and 15 vacant posts upon their revival. Hence a provision of Rs 10 crores has been proposed in the 11<sup>th</sup> Plan.

#### **VI. Health Education and Publicity through Govt/Public Sector/Private Sector Agencies**

(a) From 2001-02 onwards the Health Education activities under NIDDCP have been intensified in association with the Song and drama Division, Directorate of Field Publicity, Directorate of Advertisement and Publicity and the All India Radio to promote the consumption of Iodated salt in the remote and backward areas besides telecast of IDD spots through Prasar Bharti Further developed posters, folders, Radio & TV spots on IDD and Iodated salt. However with the increase in viewer ship of other Private TV Channels, it is proposed that during the Eleventh Five year Plan period IEC activities will also be carried out through the Private TV Channels who offer telecast at a lower rate than Doordarshan. Similarly to create awareness in the remote rural and backward areas, local NGOs / Health Care Voluntary agencies shall also be associated During the year 2006-07 a provision of Rs 974.00 lakhs exists under IEC at the Central level, hence it is proposed to make an annual budget provision of Rs 1300.00 lakhs per annum during the 11<sup>th</sup> Plan period, hence a total provision of Rs 1300 x 5 years = 6500.00 lakhs is proposed in the 11<sup>th</sup> Plan at the Central level.



increase in the cost of Petrol/Diesel and other activities. Hence it is estimated that an amount of Rs 300.00 lakhs (Rs 50,000x 600 districts) will be required during the entire five year plan period. In case the State Govts. are not in apposition to conduct surveys in the given time frame, the same may be outsourced to local Health Institutions available in the District/State /UT.

## **II. Establishment of IDD Control Cells**

For the effective implementation of NIDDCP at the State level it essential for the State Governments to ensure that the IDD Control Cell is fully established to implement and monitor various components of NIDDCP such as Surveys/Resurveys, monitoring the quality of Iodated salt, assessing the bio-availability of Iodine in the population Groups, monitor the availability of Iodated salt.

Although IDD Control Cells have been established in 30 States/ UTs , yet only 15 States have established these Cells on a full fledged scale i.e. by filling up all the three sanctioned posts of Technical Officer, Statistical Asstt. and an LDC . Since most of the State Govts are feeling the necessity of having a vehicle for the IDD Cell to monitor the programme and for undertaking surveys and resurveys it is proposed that provision of One driver may also be made in the Cell and one 10 seater vehicle may also be provided to each State/UT alongwith an annual contingent grant of Rs 60,000/-per state to meet the cost of fuel etc. Hence the estimated funds requirement would be Rs 5.00 lakhs (Staff salaries of 4 persons per annum ) x5 years x35 States= 875.00lakh + Rs 8.00 lakhs pervehicle x35 States=Rs 280.00 lakhs + Rs 60,000 x 35=21.x 5 years=105 lakhs. Total requirement would be=875+280+105=1260.00 lakhs.

### **III (a) Establishment of IDD Monitoring labs**

Establishment of IDD Monitoring labs @ Rs 3.00 lakh per lab for existing 35 States/UTs including North-Eastern States & one time Capital Expr of Rs 7.00 lakh monitoring the quality of Iodated salt, assessing the bio-availability of Iodine in the population Groups, monitor the availability of Iodated salt. In order to minimize the expenditure on maintenance etc efforts will be made to club these laboratories with the existing Public Health Laboratories in the states/UTs. Hence estimated funds required=3 lakh x 5 years x 35=525lakh for maintenance and Running plus Rs. 7 lakhs x 35 labs = Rs 245 lakhs as Capital Expr=770 lakhs.

### **III (b) Quality Control of Iodated salt at the consumer level**

In order to test the quality of Iodated salt at the consumer/household level in villages pending the development of an inbuilt mechanism to send the salt samples at the designated IDD monitoring labs, it is proposed for testing the Iodine content in salt samples Spot Test Kits @ Rs 15 per kit may be supplied either at the Panchayati Raj / Subcentre level @ 20 kits per annum. There are nearly 1,40,000/ subcentres in the country . The number of Panchayati Raj Institutions in the country is about 2.32 lakhs

(b) In addition the State Govts are also provided Central assistance for conducting health education in their own languages at the grass root level for this component cash grant is being provided @ Rs 10,000 per district. We now propose to double this amount to Rs 20,000 /per district considering the hardships of the state Govts Hence a provision of Rs 50,000x5 years x 600= Rs 1500.00 lakhs has been proposed in the 11<sup>th</sup> Plan.

## **VII . Pilot Programme for the Control of Micronutrient Deficiencies**

Pilot Project for the Control of Micronutrient Deficiencies was launched in 1995. The programme is being implemented by All India Institute of Hygiene and Public Health Kolkata in one district each in the States of Assam, Jharkhand, Gujarat, Orissa and West Bengal. The project aims to improve the Iron and Vitamin A status of school children, adolescent girls and boys, non-pregnant women, adult male and elderly population suffering from Iron and Vitamin A deficiency. During the 11<sup>th</sup> Five year Plan it is proposed to expand the programme from 5 states to 10 States and accordingly a provision of Rs 25.00 crores has been proposed in the Plan.

## **VIII. Strengthening of Central IDD Control Cell**

(a) For the effective implementation of NIDDCP and regular monitoring of the programme in states/UTs it is essential to revive the following vacant posts DADG (IDD) in the pay scale of Rs 10,000-15,000 + NPA = Rs 3.50 lakh per annum (GDMO cadre post) one post each of Technical Asstt and Jr Investigator in the pay scale of Rs 5000-8000=3.20 lakh per annum, one post of Computer in the scale of Rs 4000-6000= Rs 1.30 lakh per annum. Total additional requirement=8.00 lakhs per annum. Plus Existing requirement of funds = Rs 2.50 lakh per annum for one Research Officer and Rs 5.00 lakh per annum for four Field Asstts.

(b) One post of DADG (Micronutrient Malnutrition) in the pay scale of Rs 10,000-15,000 for non medical scientist may be created during the 1st year of the 11<sup>th</sup> Plan to take up the activities of monitoring, quality control, implementation, IEC and Nutrition surveys etc. The annual Expenditure will be around Rs 35.00 lakhs.

## **IX. Evaluation of the performance**

The National Institute of Health and Family Welfare (NIHFW) is also conducting independent overall evaluation of NIDDCP.



# NATIONAL PROGRAMME FOR PREVENTION AND CONTROL OF DIABETES, CARDIOVASCULAR DISEASES AND STROKE

## I. Introduction

The World Health Report of 2002 states that cardiovascular diseases (CVD) will be the largest cause of death and disability in India by 2020.

Non Communicable Diseases (NCDs), especially Cardiovascular Diseases (CVD's), Diabetes Mellitus, Cancer, Stroke and Chronic Lung Diseases have emerged as major public health problems in India, due to an ageing population and environmentally driven changes in behaviour. The premature morbidity and mortality in the most productive phase of life is posing a serious challenge to Indian society and its economy. It is estimated that in 2005 NCDs accounted for 5,466,000 (53%) of all deaths (10,362,000) in India

In a review published in 1996, it was reported that the prevalence of coronary heart disease (CHD) increased from 1% in 1960 to 9.6% in the year 1995 among urban Indian residents. Similarly, the prevalence in rural residents rose from 2% in 1974 to 3.74% in 1995. The prevalence of CHD is now reported to be 3-4 % in rural areas and 8-10% in urban areas among adults.

Based on these data, it is estimated that there were approximately 29.8 million patients with CHD in the year 2003. With an estimated 10% attrition and event rates they projected an annual new event or death to occur in 2.9 million persons per year with nearly 1.5 million people dying due to CHD every year. The estimated burden of common NCDs are; 2.4 million Ischemic Heart Diseases, 37.8 million diabetes, 2.4 million cancers and 0.93 million stroke. Compared with all other countries, India suffers the highest loss in potentially productive years of life, due to deaths from cardiovascular disease in people aged 35-64 years (9.2 million years lost in 2000). By 2030, this loss is expected to rise to 17.9 million years-940% greater than the corresponding loss in the USA which has a population a third the size of India's

## Magnitude of Non Communicable Diseases

	2005	2015
Total deaths in India	10,362,000	10,949,000
Deaths from NCD's	5,466,000	6458,000 (58.9%)
<b>Deaths from major NCDs</b>		
Deaths due to cancer	826,000	1,06,9000
Deaths due to Diabetes	175,000	236,000
Respiratory Diseases	674,000	864,000
Cardiovascular Diseases	2989,000	3,465,000

(Non communicable diseases include Malignant Neoplasms, Other Neoplasms, Endocrine Disorders, Neuro-Psychiatric conditions, Sense organ diseases, cardiovascular diseases, respiratory diseases, digestive diseases, genitourinary diseases, skin diseases, musculo-skeletal diseases, congenital anomalies and oral conditions)



- Diabetes is an important risk factor for both the major forms of cardiovascular disease (coronary heart disease, and stroke), especially in India.
- CVD is the major cause of death and disability in persons with diabetes.
- Common risk factors underlie CVD and diabetes: unhealthy diets, physical inactivity and overweight are common to both. Even smoking, a major risk factor for CVD has been shown in several recent studies to be associated with an increased risk of developing diabetes and a closely associated condition called the 'metabolic syndrome'.
- High blood pressure often precedes and predicts the onset of clinical diabetes by several years. This has led to 'hypertension' being regarded as a pre-diabetic condition.
- Clinical trials have shown that, mortality reduction and increased survival are better achieved by blood pressure control than even by blood sugar control, in persons with diabetes.
- Persons with CVD or diabetes require similar lifestyle therapy and often similar drug therapy for prevention of complications (diet; physical activity; smoking cessation; cholesterol lowering drugs; aspirin; ACE inhibitors; other blood pressure lowering drugs).
- Persons with diabetes frequently need to be screened for CVD and risk factors of CVD.
- Proven lifestyle interventions which can prevent the onset of diabetes (diet and physical activity) are similar to those proven to reduce the risk of developing hypertension, coronary heart disease or stroke.
- The strategic approaches and operational elements for prevention and control of CVD and diabetes are thus similar or closely interlinked; whether it is primordial prevention (preventing the acquisition of risk factors in the first place), primary prevention (preventing onset of

## II. Rationale for Having a Common Programme for the Prevention and Control of Diabetes, CVD and Stroke

There is evidence based information that NCDs are preventable through integrated and comprehensive interventions. Cost-effective interventions exist, and have worked in many countries; the most successful strategies have employed a range of population-wide approaches combined with interventions for individuals. WHO estimates that an additional 2% annual reduction in chronic disease death rates in India over the next 10 years would result in an economic gain of 15 billion dollars for the country. India is passing through an epidemiological and demographic transition and the pace of transition varies between states. The policies will have to be flexible to accommodate the differing needs and resources of the states in India.

Multisectoral interventions for providing an enabling environment will have maximum effectiveness in primary prevention. At least 80% of premature heart disease, stroke and type 2 Diabetes and 40% of cancer could be prevented through avoidance of tobacco products and the adoption of healthy diets and regular physical activity.



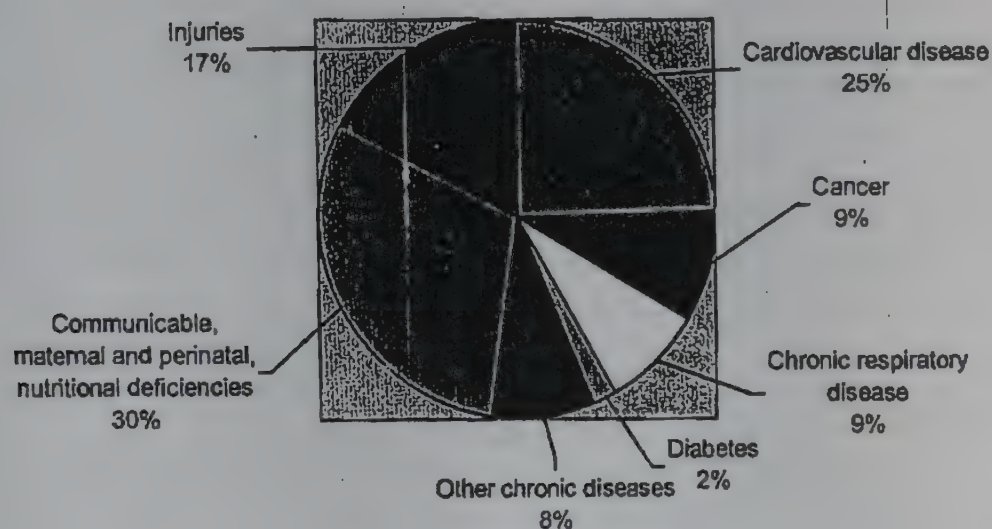


The word Non-Communicable Diseases (NCDs) in this document is used to refer to Diabetes, Cardiovascular Diseases and Stroke.

The causes of NCDs are known and are the same in India as in wealthy countries. The common risk factors are Tobacco, Alcohol, Diet and Physical inactivity and hence the population prevalence levels of these factors can predict the future disease burden. The WHO Stepwise surveillance of NCD risk factors carried out in 5 sites in India showed that only 50% of the population aged 15-64 years, consumed vegetables daily and 60-80% led a sedentary lifestyle.

Tobacco is the foremost cause of preventable death and disease in the world today. In India, 47% of the male and 14% of the female population use tobacco in some form, resulting in nearly 1 million premature deaths annually. The total economic cost of the three major diseases caused due to tobacco use in India was Rs. 308 billion (US\$ 7.2 billion) in 2002-03<sup>1</sup>. India has played a leading role in the development of Framework Convention on Tobacco Control (FCTC) and was one of the first countries to ratify the convention.

**Fig. 1: Projected deaths by Cause, 30-59 years, India 2005**



<sup>1</sup> Report on Tobacco Control in India. Ministry of Health and Family Welfare, Government of India: New Delhi, 2004





disease by reducing risk factors which are elevated) or secondary prevention (reducing the risk of complications after the onset of disease).



**Fig. 2. Four common risk factors are responsible for majority of the NCDs**

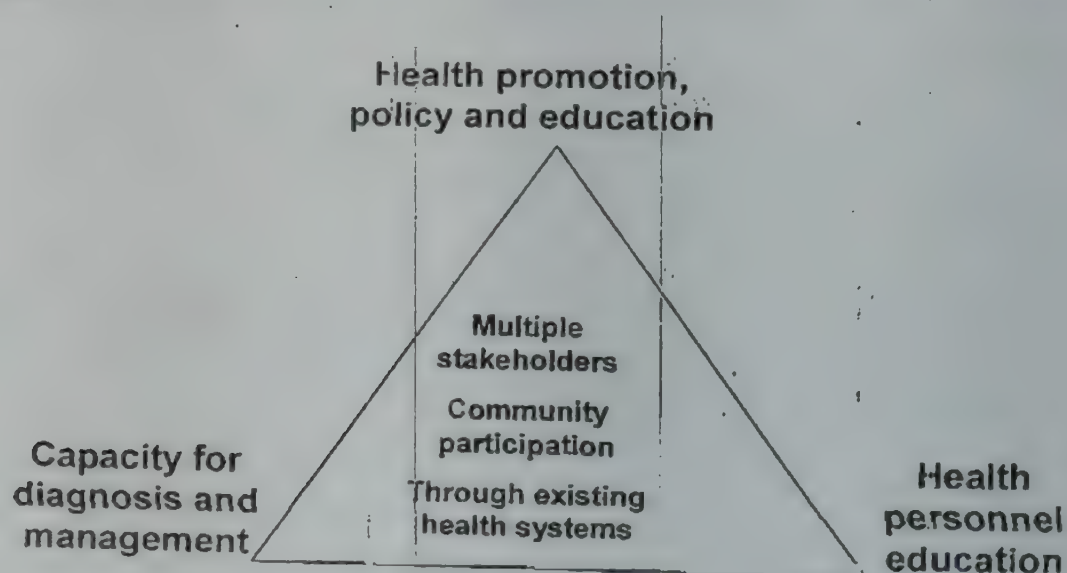
### **III. Prevention and Control of CVD and Diabetes: Guiding Principles**

- An Integrated Programme for CVD and DM Prevention and Control must mainly focus on preventing and reducing risk factors common to these diseases.
- The programme must not only address biological risk factors (through individual based approaches) but also behavioural risk factors (through community-based approaches) and their socio-economic determinants (through policy interventions).
- The 'population' approach and 'high risk individual' approach are complementary. While the latter provides a short-term impact, the former provides greater medium and long-term benefits and is more sustainable as well as cost-effective.
- In most populations, the majority of CVD events arise from the individuals with modest elevations of many risk factors than in individuals with marked elevation of a single risk factor.
- This necessitates (a) population based programmes for promoting health behaviours which will result in modest but meaningful reductions in many risk factors across the whole population, yielding high cumulative absolute benefits and (b) individual risk assessment and risk reduction programmes which recognize and reduce the 'total cardiovascular risk' resulting from a combination of multiple risk factors. Behaviours and therapies which modify multiple risk factors carry the greatest benefit.
- Health promotion, a key component of the programme, must combine educational activities with policy interventions to provide a supportive environment.
- The Government must play a strong role in CVD prevention and control, by formulating relevant policies and allocating adequate resources for early initiation and effective implementation of multi-sectoral action.



- Community mobilization is a vital ingredient of successful programme implementation.
- Public-Private partnerships need to be created and strengthened to help effective implementation and resource mobilization.
- Prioritization of needs and sequencing of activities are needed to make optimal use of resources available at each stage of the programme. Categories of core, expanded and optimal programme components need to be defined.
- Capacity building, at all levels of health care and in other relevant sectors, is essential for the successful design and delivery of the NCD prevention and control programme.
- Assure health financing mechanisms to decrease barriers to preventive services, lower cost burden of clinical care for patients and provide incentives for best practice.
- Develop public private partnerships to strengthen effective implementation and resource mobilization.
- Integrate opportunistic screening at levels of health care.
- Implement systematic approaches for monitoring and evaluation, including continuing surveillance of NCD risk factors

#### IV. Conceptual Framework for Implementation of an Integrated Programme



#### V. Justification for Phased Implementation

The NPDCS will be implemented in a phased manner with a piloting being done in the Preparatory Phase 2006-07. Subsequently, the programme would be implemented across the country through select institutions over the XI Five Year Plan. This being a new Programme, the phased implementation would assist us in proper execution of the plan and also evaluation of the strategies for control of NCDs. The programme may be expanded to the rest of the country over the subsequent five year plans.

## **VI. Aim of the Programme**

- Prevention and control of common NCD risk factors through an integrated approach
- Reduction of premature morbidity and mortality from DM, CVD and Stroke

## **VII. Objectives of the Programme**

### **Long term goals**

1. Reduce prevalence of risk factors of common NCDs
2. Reduce morbidity and mortality due to Diabetes, Cardiovascular diseases and Stroke
3. Building capacity of health systems to tackle NCDs and improvement of quality of care

### **Immediate objectives**

1. Primary prevention of major Non Communicable Diseases through Health Promotion
2. Surveillance of NCDs and their risk factors in the population
3. Capacity enhancement of health professionals and health systems for diagnosis and appropriate management of NCDs and their risk factors.
4. Reduction of risk factors of NCDs in the population
5. Establish National Guidelines for management of NCDs
6. Development of strategies/ policies for prevention of NCDs in the country through Interministerial collaborations/ coordination.
7. Community empowerment for prevention of NCDs

## **VII. Implementation Strategies**

### **a. Health promotion/ Health Education**

1. Media package development
2. Strengthen IEC for Community Awareness
3. Targeted Interventions at specific settings like worksites, schools, rural, urban and peri-urban areas

### **b. Professional Education**

1. Appropriate modification of medical education/ health professionals' training to suit the current health needs
2. Initiation of new/ applied courses
3. Continuing Medical Education



### **c. Diagnosis and Management**

1. Training of Health Professionals at all levels of health care including Primary, Secondary and Tertiary levels for early detection and appropriate management and referral
2. Strengthening of Health infrastructure including equipment at all levels of health care for early detection and appropriate management and referral
3. Adequate and appropriate logistic support like supply of drugs and consumables / transport/ maintenance of equipment etc

### **d. Community Participation**

1. Involvement of Panchayati Raj Institutions and District administration in the districts for promotion of Healthy lifestyles
2. Involvement of ASHA workers for IEC, prevention, early detection and appropriate referral
3. Involvement of Anganwadi workers in IEC, prevention activities and also linkages with the primary health care

## **VIII. Components of the Programme**

The proposed programme will have the following components:

- i) Health Education
  - a. Through Mass Media
  - b. Targeted Health Education
- ii) Policy Interventions to Promote Healthy Living Habits
- iii) Early Detection of Persons with High Levels of Risk Factors (at the risk of developing disease)
  - c. Opportunistic Screening
  - d. Targeted Screening for Risk Factors
- iv) Management and reduction of risk:
  - e. Cost-effective clinical care of established risk factors and diseases (CVD and diabetes)
- v) Operational Research
- vi) Health Systems

### **i) Health Education**

#### **a. Through Mass Media**

Various categories of electronic and print media would be utilized to promote public awareness on:

1. Healthy food habits,
2. Regular physical activity,
3. Avoidance of tobacco,
4. Stress management,
5. Blood pressure, blood sugar, blood cholesterol and other blood fats

Common manifestations and early warning signs of major heart diseases and diabetes (See Appendix I).

## **b. Targeted Health Education**

This would involve health education specifically designed for and delivered to well-defined target groups such as children, women and industrial employees,

1. To be provided in specific settings like schools, worksites and community centres.
2. Ministry of Health & Family Welfare will work with relevant civil society partners to enable the early initiation and effective implementation of such programmes.

## **ii) Policy Interventions to Promote Healthy Living Habits**

These would include measures to:

- a. Raise the price of tobacco products and unhealthy foods,
- b. Ban all forms of tobacco advertising,
- c. Place health warnings on the packaging of tobacco products, food labelling,
- d. Increase the availability of health promoting foods like fruit and vegetables, decrease the content of salt, sugar and unhealthy fats in processed foods,
- e. Improve civic facilities for safe and pleasurable physical activity in urban areas.
- f. Such measures are multi-sectoral and require the involvement of other Central Ministries and State Governments. MoHFW will evolve mechanisms for consultation and coordination with these and other relevant agencies (see Appendix II).

## **iii) Early Detection of Persons with High Levels of Risk Factors (at the risk of developing disease)**

Early detection and appropriate management of risk factors before they result in disease is important. This would be achieved through:

**Opportunistic screening** of persons at the point of primary contact with any health care provider. Such screening would involve

- Simple clinical examination comprising relevant questions and easily conducted physical measurements (such as history of tobacco consumption and measurement of blood pressure). Risk factors to be covered through such screening are listed in *Appendix III*.
- The programme would impart context specific training to health care providers in public and private sector, including non-physician health care providers like nurses and multi-purpose workers, which will enhance their



knowledge, skills and motivation for regularly conducting such opportunistic screening.

### **Targeted Screening for Risk Factor**

This would involve development of context-specific and resource sensitive algorithms for risk detection, stratification and management, in persons who are considered to be at high risk during the initial opportunistic screening. Relevant laboratory investigations for CVD risk factors and diabetes as well as disease assessment would be advised (as per list provided in Appendix III).

This would be facilitated through:

- Development and dissemination of simple algorithms for the medical and paramedical staff for risk detection and referral.
- Provision of appropriate investigation services at primary/secondary levels of care.

#### **iv) Management and reduction of risk through**

- a. Provide specific algorithms for risk reduction and monitoring (for actions by each category of health care providers).
- b. Availability of safe and inexpensive drugs for acute and chronic care of CVD and diabetes
- c. Condition specific, culturally appropriate, patient education packages.
- d. Training of providers in culturally appropriate techniques for modifying lifestyle behaviours.
- e. Inclusion of services for follow-up and monitoring of risk factors for CVD and diabetes among the range of services offered at the primary level.
- f. Training of primary health care staff in monitoring, and adherence and compliance issues.

#### **v) Cost-effective clinical care of established risk factors and diseases (CVD and diabetes) at various levels of health care would be ensured through:**

- a. Guidelines for high risk primary prevention and secondary prevention
- b. Provide education and technical audits to ensure appropriate practice patterns.
- c. The programme would integrate essential elements of acute as well as chronic health care for hypertension, diabetes, coronary heart disease and cerebrovascular disease at primary, secondary and tertiary health care levels, along with strengthening of referral mechanisms. The specific components of clinical care which would be addressed by the programme are provided in Appendix III.

#### **vi) Surveillance**

Surveillance is an effort both to influence and evaluate health policies and programmes. Utilizing the WHO Stepwise approach, the core risk determinants for these diseases in Step I and II of the module should be concentrated on for

- Finalisation of Management Guidelines for NCDs and their risk factors.
- Preparation and Dissemination of IEC strategy,
- Preparation and Dissemination of NCD Resource kits
  - *NCD prevention and management for health professionals*
  - *Patient education packages*
- Health Promotion in specific settings:
- Rural/ urban/ periurban/ schools/ workplaces
- Survey for risk factors/ NCDs

### **NCD Cell at Centre**

For Planning, Coordination, Guidance of National Programme

- Establishment of Central Hub for NCD to provide the following:
  - Database
  - Resources: Training/ IEC
- For Monitoring and Evaluation both Internal and external

### **State NCD Cell**

Would be Nodal Office in the state with a Designated Nodal Officer

- Would Facilitate and Coordinate NCD control activities in the state
- Would Monitor and evaluate NCD control activities in the state

### **TOR for State NCD Cell**

- A Nodal Officer with a separate establishment:
  - Room/ Computer/ assistants/accessories
- Identify 3-6 Medical Colleges in the state preferably outside the state capital
  - Government/ Private/ NGO/ ISM
  - Indicate funding mechanism for each
  - Ensure proper fund flow
  - Monitor implementation through medical colleges
  - Act as liaison between medical college, centre and resource centre.
- Involve District administration in NCD prevention activities
- District hospital/ CHC coordination
- Manpower

**Expenditure: 10 lakhs/ year + 10 lakhs first year**

**60. Lakhs \* 35= 21.00 crores**

### **Resource Centers (20)**

Following would be the Identification criteria:

- Field of Expertise
- Adequate infrastructure



### **Role of Resource Centers:**

- Technical Resource Centre to support:
  - For Capacity Building in NCD Control
  - For Surveillance and Research activities
  - To Monitor and evaluate NCD Control activities
- Provide multidisciplinary expertise either through in-house expertise in all NCD specialties or through sustainable networking with constellation of institutions

### **Term of references for resource centers**

20 centers

These Resource Centers would be responsible for 7-8 medical colleges in the region and do the following activities

- Needs assessment of medical colleges
- Training of faculty/CMEs
- Undertake and Coordinate research
- Act as referral centre
- Networking amongst the medical colleges
- Networking with other centers
- Telemedicine

**Expenditure: Rs.3.00 crore each over 5 years**  
**60.00 crores**

### **Medical Colleges (upto 150)**

- 3 to 6 per state depending upon the need
- Identified by State Government
- The Medical Colleges have to be outside the state capital (except for states which have medical colleges only in the capital)
- Private Medical Colleges can be considered
- AYUSH institutions to be part of the programme in Districts where they are available

### **Role of Medical College**

- Augment NCD care facilities: flexible, as per needs
- Responsible for operationalising the District Programme in any one district
  - Multidisciplinary Core team comprising of general medicine, cardiology, community medicine, surgery, biochemistry, pathology faculty
- Support health systems in the District
- Surveillance of risk factors
- Health promotion and education
- Organize Tobacco cessation clinics/ counseling clinics for Diet, physical activity and alcohol prevention

- Finalisation of Management Guidelines for NCDs and their risk factors.
- Preparation and Dissemination of IEC strategy,
- Preparation and Dissemination of NCD Resource kits
  - *NCD prevention and management for health professionals*
  - *Patient education packages*
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### **Role of Resource Centers:**

- Technical Resource Centre to support:
  - For Capacity Building in NCD Control
  - For Surveillance and Research activities
  - To Monitor and evaluate NCD Control activities
- Provide multidisciplinary expertise either through in-house expertise in all NCD specialties or through sustainable networking with constellation of institutions

### **Term of references for resource centers** 20 centers

These Resource Centers would be responsible for 7-8 medical colleges in the region and do the following activities

- Needs assessment of medical colleges
- Training of faculty/CMEs
- Undertake and Coordinate research
- Act as referral centre
- Networking amongst the medical colleges
- Networking with other centers
- Telemedicine

**Expenditure: Rs.3.00 crore each over 5 years**  
60.00 crores

### **Medical Colleges (upto 150)**

- 3 to 6 per state depending upon the need
- Identified by State Government
- The Medical Colleges have to be outside the state capital (except for states which have medical colleges only in the capital)
- Private Medical Colleges can be considered
- AYUSH institutions to be part of the programme in Districts where they are available

### **Role of Medical College**

- Augment NCD care facilities: flexible, as per needs
- Responsible for operationalising the District Programme in any one district
  - Multidisciplinary Core team comprising of general medicine, cardiology, community medicine, surgery, biochemistry, pathology faculty
- Support health systems in the District
- Surveillance of risk factors
- Health promotion and education
- Organize Tobacco cessation clinics/ counseling clinics for Diet, physical activity and alcohol prevention

- Monitoring, evaluation and reporting

Expenditure: 600.00 crores:

- infrastructure strengthening: 3.00 crores:  
up to 30% construction permitted

### **Involvement of District Administration**

#### **Role of District hospital**

Depending on the services available at District Hospital:

- Referral care for NCDs
  - Augment facilities based on needs: ICU/ emergency unit/ equipment/ etc. (Flexible)
- Health promotion and education
- Early Detection and management
- Management of risk factors: Tobacco cessation clinics/ counseling clinics for Diet, physical activity and alcohol abuse
- Involvement of private sector and NGOs for health promotion

Expenditure: Rs.2.00 crore over 5 years (300 crores)

- infrastructure strengthening: 1.5 crores:  
upto 30% construction permitted
- 50 lakhs for recurring expenses @ 10 lakhs per year:
  - Contractual manpower (One Doctor with public health background/ extra manpower appointed)
  - Maintenance
  - Consumables
  - Training
  - Outreach activities

### **Rural Hospitals**

- Referral care for NCDs/ complications
  - Augmentation of facilities for management of NCD complications/ emergencies- Emergency unit/ equipment/ manpower/ construction (Based on need)
- Health promotion and education
- Early Detection and management
- Management of risk factors: Tobacco cessation clinics/ counseling clinics for Diet, physical activity and alcohol abuse
- Involvement of private sector and NGOs for health promotion

Expenditure: Rs.1.00 crore over 5 years

(30 lakhs per Rural hospital)

1.00 crore\* 150= 150.00 crores

1.00 crore for recurring expenses @ 20 lakhs per year

Research

Training



5 lakhs for 1st year + 1.00 each year for next 5 years (5 years)

10 \*150= 15.00 crores

Equipment procurement and maintenance

Construction: upto 30% permitted

- Contractual manpower(full time/ parttime)

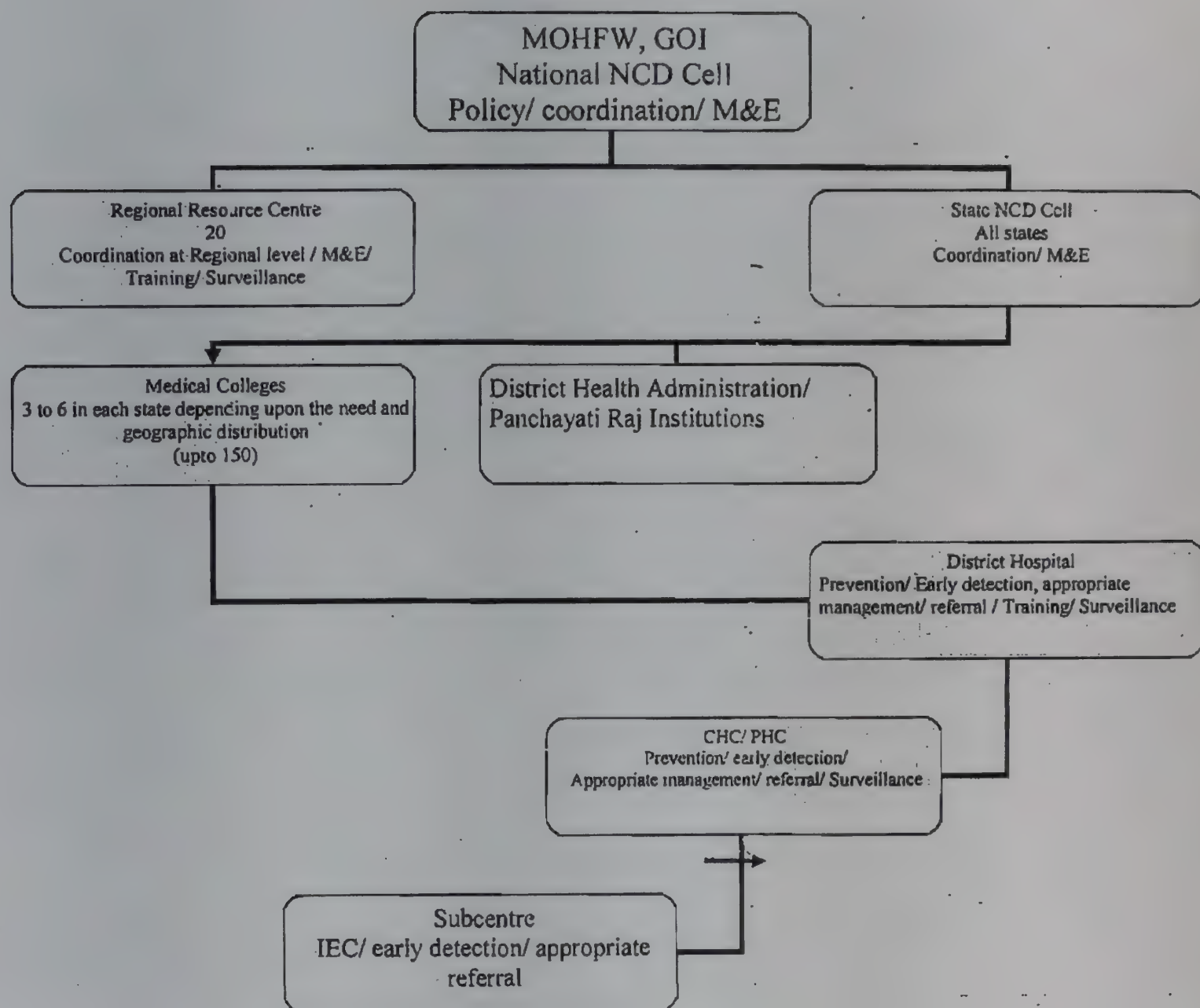
Maintenance/ miscellaneous

- Involve community/ Rogi Kalyan samiti To establish linkage with District Hospital for early detection and health promotion

#### XI Five Year Plan: 2007-2012

1. Expansion to all states and UTs to cover 150 medical colleges and 150 district and sub-district health facilities.

Budget Head	Budget (in crores)
150 Medical Colleges (eg. ambulance, 2nd ICU, cardiology equipments, CT) @ 4 crores each	600
Research (operational/ interventional/ applied)	50
National and state level IEC campaign	20
20 Resource Centres@ 3 crores each	60
150 Districts – healthy lifestyle centres (10 lakhs each)	15
150 District Hospitals (2 crore each)	300
CHC (1 crore per district)	150
NCD Cell at the Centre	5
NCD Cells in states/ UTs (35) (60lakhs each)	20
PHC/SC (20 lakhs per district)	30
<b>TOTAL over 5 years</b>	<b>1250</b>





**Content areas for health education and key messages**

- *Tobacco control:* Public education on tobacco related health hazards, benefits of tobacco cessation, hazards of passive smoking and national/sub-national laws and regulations related to tobacco control.
- Promotion of *physical activity* within the local culture and context, by enhancing awareness, enhancing aspirations to be physically active in the community/population.
- *Consumption of a healthy diet* which is culturally and contextually appropriate, available and affordable. Emphasis should be on increasing the intake of locally available fresh fruits and vegetables in the diet, decreasing the consumption of unhealthy fats, decreasing the salt intake in the food, decreasing the use of processed food and reducing caloric intake in obese individuals.
- *Optimal body weight and fat distribution*, through a combination of dietary measures and physical activity which will help to maintain healthy body weight and decrease in abdominal fat.
- *Normal blood pressure:* The importance of periodic measurements of blood pressure in adults and maintenance of blood pressure within the normal ranges and the benefits provided by a combination of healthy diet and physical activity for achieving lower blood pressure levels.
- *Importance of control of blood sugars:* Early detection of abnormal plasma sugar levels and effective control of blood sugars can prevent the complications of diabetes.

## Changes Needed In Policy

*Policy Interventions:* Appropriate and effective policies (which make healthy behaviours desirable, affordable, acceptable and sustainable) are likely to have widespread and early impact on CVD and DM prevention and control. Such policies should be developed and implemented in the areas of tobacco control, healthy nutrition and promotion of physical activity. Well designed policy measures can be very powerful tools in affecting changes in behaviours related to tobacco control, diet and physical activity and can thus have powerful, far reaching and long-term effects at the population level.

At the macro policy level the need to identify CVD and DM prevention as part of the primary health care package should be recognized and given due priority alongside reproductive and nutritional health and communicable diseases. CVD prevention should be seen as being synergistic with poverty reduction strategies, and addressed in development initiatives

Policy initiative should aim to integrate these diseases with communicable disease, reproductive health and population control programmes in an attempt to create cost and time effective opportunities for prevention.

- Policy change with respect to NCD must include relevant areas in the domains of food and nutrition, tobacco, agro-industrial diversification, urban planning, education and rural development. Policies should ensure the availability of effective drugs, devices and procedures at affordable prices to be used in a cost-effective manner.
- *Stepwise Approach:* Policy issues regarding tobacco should be dealt with in two stages. Initial priorities should focus on goals that are realistically achievable in the short to medium term, such as imposing bans on advertising and sale to minors, displaying statutory warnings on labels and legislation to ban smoking in public places and transport utilities. Subsequently major issues should be addressed such as agro-industrial diversification favoring tobacco substitution, and transnational marketing of tobacco, which may affect pricing, production and taxation.
- *Taxation:* Governments have three reasons to raise taxes on tobacco:
  - To deter consumption
  - To correct for externalities such as health care costs
  - To raise revenue

Tobacco taxes have been used not only as price-linked mechanisms for discouraging tobacco use, but also as a means of raising resources to fund health promotion and tobacco control programmes.

The World Bank reviewed the evidence on the effectiveness of tobacco taxation, in a 1999 report, and concluded that a 10% increase in the prices of tobacco products would reduce their use by about 4% in developed countries



and by about 8% in developing countries.<sup>1</sup> Even lower rates of tax increase have produced beneficial effects.<sup>2</sup>

*Other Demand Reduction Measures:* These include a comprehensive ban all forms of advertising and promotion, ban on sale to and by legal minors; statutory health warnings (in local languages, preferably accompanied by pictorial warnings) on all tobacco product packages; laboratory testing and regulation of major constituents of tobacco products and their emissions as well as a ban on smoking in all public places. Public education on the hazards of tobacco consumption and tobacco smoke exposure is also an important demand reduction measure. The evidence for the effectiveness of these measures as well as the methods of their implementation are reviewed in the *Report on Tobacco Control in India*.<sup>2</sup>

*Supply-side Actions:* The supply side pertains mainly to crop substitution, trade restrictions, controlling smuggling and even banning of the product.

- It is feasible and viable for tobacco cultivators to switch over to alternative crops such as cotton, chillies, isabgul (Plantago), cotton, maize, soya bean, sugarcane and potato. An in-depth market analysis is required to identify alternative crops. This should include considerations of the size of the potential markets both domestic and international elasticity of demand and supply, inter-regional and international competition, and the relative advantages of the tobacco -growing region (i.e., production, costs, soils and access to markets) compared with competing regions.
- The government should provide assistance during transition, especially to poorer farmers, which include rural training, broader off-farm employment opportunities and assistance with crop diversification.
- Tobacco diversification needs to be considered within a broader developmental framework
- The feasibility of non-farming jobs should also be considered, which might entail infrastructural investment.

#### Measures needed for Promotion of Healthy Diet and Physical Activity

##### **National Governments should**

- Conduct a multi-stakeholder consultation on the development of a national action plan for implementing the WHO Global Strategy on Diet, Physical Activity and Health. This consultation should engage and elicit the active participation of different government departments and agencies, technical experts, civil society groups (representing health NGOs, consumer groups, women's associations, youth groups and other relevant sections of the civil society), media, opinion makers and, wherever appropriate, sections of the food industry. This process should also help to establish a National Coordinating Committee which would guide the process of implementation through multi-sectoral policies and programmes.
- Develop and implement food and agriculture policies, which will enable adequate production and domestic supply of fruits, vegetables and

whole grain cereals, at affordable prices to all segments of the population.

- Develop and implement policies related to edible oil production and domestic supply, which will enable consumers to exercise healthier choices, in accordance with the nutrient recommendations made in this report.
- Employ regulatory measures to restrict the hydrogenation of oils and fats intended for dietary consumption or manufacture of food products.
- Enact and enforce measures for labeling of food products, with respect to their sodium, fatty acid and calorie content, with clear codes, which will enable consumers to readily identify products with high sodium and/or fatty acid content.
- Motivate the food industry, through appropriate incentives and disincentives, to manufacture healthier food products for wide availability in the market, at affordable prices.
- Develop and implement policies, which will enable adequate sustainable supply of fish in domestic markets.
- Facilitate the development of national food based dietary guidelines through consultation with nutrition experts and community representatives.
- Develop and implement policies involving urban planning and transport to create facilities for supporting regular physical activity by all people of all ages.
- Develop national standards for manufacture and marketing of fats and oils.
- Utilize mass communication channels to promote national and community-based nutrition education.
- Support efforts by civil society organizations in their efforts to promote healthy dietary practices in the community and mobilize community action for physical activity.
- Implement policies to ensure allocation of uncemented green open spaces while planning the growth of cities and towns.
- Ensure availability of safe pedestrian pathways and potential cycle lanes as essential urban amenities.



# Operational Components Of The National Programme For Prevention And Control Of Cvd And Diabetes

Area	Essential Package (core components)	Optimal Package (other components)
<b>PREVENTION</b>	<p>Tobacco Control (Taxation, Regulation, Education)</p> <p>Promotion of Healthy Diets (Production, Pricing, Consumer Empowerment) including the preparation and dissemination of national food based dietary guidelines</p> <p>Promotion of Physical Activity (Planning of cities and work-sites, community education)</p> <p>Mass media campaigns + targeted special group programmes for community health education</p> <p>School based programmes for 'Learning to Live Healthy'</p>	<p>Phasing out tobacco agriculture and industry (alternate crops and occupations)</p> <p>National Nutrition Policy (Involving agriculture and industry)</p> <p>National Transport Policy (Pollution control and promotion of physical activity)</p>
<b>SURVEILLANCE</b> <i>(Adopt and adept the STEPS approach of WHO)</i>	<p>Tobacco Consumption Habits</p> <p>H/o Diabetes, Hypertension</p> <p>Blood Pressure</p> <p>Pulse Rate</p> <p>Body Mass Index</p> <p>Waist circumference</p> <p>NCD mortality (by cause, age and sex)</p> <p>National Aggregate Indicators (e.g., production and consumption of tobacco, fruit and vegetables)</p>	<p>Blood lipids (total cholesterol, HDL cholesterol)</p> <p>Diabetes (by blood chemistry)</p> <p>Health Beliefs</p> <p>Dietary Consumption Patterns</p> <p>Physical Activity Patterns</p> <p>NCD Morbidity (Disability)</p>
<b>SCREENING</b>	<p>'Opportunistic' screening for:</p> <ul style="list-style-type: none"> <li>- Tobacco consumption</li> <li>- High Blood Pressure</li> <li>- Overweight</li> <li>- Central Obesity</li> </ul>	<p>'Targeted' Screening for:</p> <ul style="list-style-type: none"> <li>- Diabetes</li> <li>- Dyslipidemia</li> <li>- Transient Ischaemic Attacks</li> </ul>
<b>MANAGEMENT</b>	<p>Clinical Algorithms for:</p> <ul style="list-style-type: none"> <li>- Acute myocardial Infarction</li> <li>- High Blood Pressure</li> <li>- Congestive Heart Failure</li> <li>- Diabetes</li> <li>- Transient Ischaemic Attacks</li> <li>- Childhood Leukaemias</li> </ul>	<p>Clinical Algorithms for:</p> <ul style="list-style-type: none"> <li>- Angina</li> <li>- Dyslipidemia</li> <li>- Stroke</li> <li>- Obesity</li> </ul>
<b>HEALTH SYSTEMS</b>	Integrate core components of	Strengthen Quality Assurance

	<p>prevention, surveillance, screening and management into primary and secondary health care</p> <p>Strengthen Health Provider Education (Learning and Skills relevant to NCD control)</p> <p>Enhance the knowledge and decision making ability of health care managers in the elements of NCD control</p> <p>Implement essential drugs policy for provision of NCD related drugs</p>	<p>in NCD related health care delivery</p> <p>Perform technology audits to identify and correct inappropriate use of expensive technologies</p> <p>Strengthen the production and distribution of cost-effective drugs and devices for NCD care in collaboration with industry.</p>
RESEARCH	<p>Strengthen capacity for research relevant to NCD control through national and international partnerships (Implementation Research, to effectively apply available knowledge)</p>	<p>Support innovative research in the aetiology of NCDs (as relevant to Indian Population Groups) and for the identification of new technologies which are contextually cost-effective</p>



# APPENDIX - IV

## Draft Annual Budget

Activity	Prime Mover	Partners	Funding (Rs)
<b>Mass Education</b>	Ministry Of Health And Family Welfare, Govt Of India	State/Ut Governments NGOs Corporate Sector Media	100 Crores/ Year
<b>Targeted Education</b>			
▪ Schools	Mohfw, GOI	Ministries Of Education At Centre, State/ Ut NGOs	50 Crores/ Year
▪ Worksites	Mohfw, GOI	Ministries Of Industry At Centre, State/ Ut Corporate Sector Medical Colleges NGOs	25 Crores/ Year
▪ Community Settings	Mohfw, GOI	NGOs (Including Resident Welfare Associations) Local Bodies (E.G. Panchayats)	25 Crores/ Year (Also Utilizing Funds From Nrhms)
<b>Interventions To Detect &amp; Reduce Risk In Primary Health Care Settings</b> - High Blood Pressure Detection & Control - Diabetes Detection & Control - Tobacco Cessation	Mohfw, GOI	Health Ministries Of States/ Uts Health Professional Organizations (E.G. Ima) Medical & Nursing Colleges NGOs	100 Crores/ Year
<b>Interventions To Improve Acute Care In Primary &amp; Secondary Health Care Settings</b>	Mohfw, GOI	Health Ministries Of States/ Uts Health Professional Organizations (E.G. Ima) Medical & Nursing Colleges NGOs	50 Crores/ Year
<b>Interventions To Improve Chronic Care Of Diagnosed Ncds</b>	Mohfw, GOI	Health Ministries Of States/ Uts Health Professional Organizations (E.G. Ima) Medical & Nursing Colleges NGOs	100 Crores/ Year
<b>Integration Of Ncd Surveillance Into Integrated Disease Surveillance Programme &amp; Strengthening Of Other Surveillance Mechanisms</b>	Mohfw, GOI (+Allied Organizations)	State/ UT Governments Medical Colleges Others (Such As Large Corporate Sector Partners)	25 Crores/ Year

<b>Operational Research</b>	Mohfw, GOI (+Allied Organizations)	Medical Colleges/ Other Academic Institutions NGOs	20 Crores/ Year
<b>Multi-Sectoral Policy Development &amp; Health Impact Assessment</b>	Mohfw, GOI (+Allied Organizations)	Other Relevant Ministries Medical Colleges/ Other Academic Institutions NGOs	5 Crores/ Year
<b>Total</b>			500 Crores/ Year



# NATIONAL ORGAN TRANSPLANT PROGRAMME

## A. Magnitude of Problem

While there are no accurate figures, the estimated number of *new patients who reach End-organ failure every year* is as follows:

(i)	Kidneys	100,000 / yr
(ii)	Liver	80,000 / yr
(iii)	Heart	80,000/yr
(iv)	Lung	Several thousand per year
(v)	Pancreas	> 50,000 / yr
(vi)	Cornea	At least 10,00,000 at any given time.

In most cases, patients die of the end-organ failure, not of the diseases that caused it.

## B. Treatment available at present

- (i) Dialysis facilities available only at select centers.
- (ii) Kidney Transplant to approximately 3500 per year. Most of the kidney transplantations are from live donors.
- (iii) Few thousand corneas are transplanted every year.
- (iv) Only few transplantation of liver (<150), heart (<40), lung (2), pancreas (2) done *in the past 10 years*.

## C. Resources

### Skilled Manpower / Centres :

Registered Kidney Transplant Centre:	<100
Nephrologist (involved in Transplantation)	<350
Transplantation Surgeon – Full time	<10
Part time	<60

## D. Legislation

Transplant of Human Organs Act 1994 & Rules 1995 are implemented all over India. THOA review committee has submitted the recommendations which are being implemented separately.

## E. Scope of the N.O.T.P.

### 1. Preventive

- 1. For every patient who reaches end Stage Organ Failure, there are ten who are in various stages of failure.

II. Education, promotion of preventive measures, cross liaisoning with various other programmes such as NCD/CVD control, diabetes control, etc.

- Healthy lifestyle habits
- Early detection management, follow-up.
- Other similar measures.

## **2. Educative**

- I. Health education of the general public about healthy lifestyle for prevention of chronic diseases.
- II. Promoting awareness among professional of various disciplines as well as students at medical college level of the growing importance of prevention, timely recognition and treatment of various kinds of organ failure.
- III. Change in attitude of the general public about organ donation from the dead cadavers or brain stem dead patients for retrieval of organs. Existing religious beliefs prevent the near relatives from donating organs from dead patients. Results from Cornea donation have also not been very encouraging.

## **3. Curative**

- I. Encouragement for opening up of more centres for various kinds of transplantation
- II. Dialysis: There should at least 2 machines at every District Hospital with a Nephrologist in the phased manner. There are approximately 600 Districts, i.e., approx.. 1200 dialysis machines are required. Indigenous machines are likely to cost approx. Rs.1 to 1.5 lac (as opposed to 6 – 8 lac for imported dialysis machines).
- III. Transplantation at every Medical College and other suitable Hospitals, in a phased manner.
- IV. Cooperation of Pharmaceuticals in making available the latest drugs required for organ failure and transplantation including immuno suppressants, in an expanding market, at lowered costs.

## **4. Surveillance & Research**

1. Collection of data regarding incidence, treatment, results, follow-up, efficacy of therapy.
2. Analysis / Publication of data.
3. Pure research, especially in genetics / stem-cell/ nanotechnology/ bio-medical engineering, etc.



## **5. Training**

- I. Number of transplant professionals is decreasing, while the number of patients is increasing.
- II. It is important that practical and structured training e.g. CME etc. be evolved for professionals at all levels.

## **6. Public education**

Use of various modalities of media, for maximum effect for dissemination of relevant information regarding organ donation, especially at school, college and home settings.

## **7. Enhanced role of Organ Retrieval Banking Organisation (ORBO):**

- (i) Nodal centre for transplantation activity.
- (ii) Initially presence at Metros, later at State Capitals and other centres.
- (iii) Registry of all altruistic donors intending to donate organs after death.
- (iv) Registry for potential recipients for cadaver transplants.
- (v) Liase with Transplant Coordinators in identifying best matched recipients.
- (vi) Liase with various Professional Societies, in setting standards and upgrading as per latest scientific information.
- (vii) Other relevant activities.

## **8. Budget requirements**

### **Source:**

1. Govt. of India plan funds

### **Proposed Schemes:**

1. Health education of general public through TV/Radio/Newspaper etc. (through ORBO under guidance of Deptt. of Health)

Rs. 1 Crores per annum

2. Establishment and functioning of ORBO network on all India basis (Implementation by ORBO-AIIMS)

Rs. 2 Crores per annum

3. District Organ Transplant Programme (with focus on dialysis facilities) through District societies in collaboration with NGOs (Similar to DCCP scheme of NCCP)

Rs. 5 crores per annum

4. Transplant wing scheme for Govt. Medical Colleges (Grant-in-aid) (Similar to DCCP scheme of NCCP)

Rs. 10 Crores p.a. (5 medical colleges every year @ Rs. 2 Crore each)

5. Miscellaneous (Grant to State authorization committees, incentives to donors, training etc. through State Govt.)

Rs. 2 Crore p.a. (Upto Rs. 10 Lakh per state per year)

Total Budget estimate = Rs. 20 Crores per year

Total requirement for eleventh plan = Rs. 100 crores



## ORAL HEALTH

### Executive summary of Oral Health Program for XI Plan Commission

It has been proved on number of occasions; that oral diseases have a great impact on systemic health & is now established that periodontal diseases (Gum disease) has far reaching effects on various systemic diseases like Low birth weight, Diabetes, Heart disease, Respiratory diseases, Stroke, Atherosclerosis etc. Tooth loss due to gum diseases and dental caries cause esthetic, functional, nutritional and psychological problems. *Oral cancer prevalence is highest in India, causing high morbidity and mortality.* Throughout the world greater emphasis is being given on the oral health of children, adults & elderly as good oral health provides the basis for general health.

To overcome the huge disease burden, National Oral Health Care Programme, a pilot project on Oral Health was started in the year 1999 by Dte. GHS and the Ministry of Health & Family Welfare. Under this project, All India Institute of Medical Sciences has been made a nodal agency. There has been modules & IEC materials developed under this program. It has received acceptance in the 12 pilot states & is important to expand the program to the whole country.

In the absence of basic oral health care facilities in the states, it is proposed that primordial, primary and secondary prevention, early detection and interceptive measures should be implemented as a centrally sponsored programme. In this regard, the ongoing programme may be strengthened and its scope should be widened to include promotive and interceptive measures. Towards this objectives, all the infra structure of PHC network, voluntary organizations, dental teaching institutions and public-private partnership should be encouraged.

It is expected that need for geriatric oral health care will increase many fold in coming years due to: 1) increase in the geriatric population and 2) higher percentage of elderly expected to be dentate & hence there is a great urgency to take the issues related to the oral health of the elderly population in specific.

At present, the emergency medical relief, accident and trauma services in our country do not include dental, oral and maxillofacial services. However, it is worth to mention here that out of all accident and trauma cases, 20% have some or other kind of oro-maxillofacial trauma requiring intervention. Moreover, oral and maxillofacial trauma needs to be managed by only Oral and Maxillofacial surgeon and not by any other specialist. It is suggested that all emergency medical relief, accident and trauma services in our country should have Oral and Maxillofacial surgeon, with relevant infrastructure, equipments and materials

The treatment of Oro-dental diseases is enormously expensive and no Govt. across the globe can bear the cost for dental treatment for its entire population. It is suggested that Govt. should bear the cost for primary and secondary prevention completely and may impose cost to cost pricing for the treatment part at all levels.



There can be special provision for the people below poverty line, elderly and children. Apart from this, Govt. may introduce dental treatment in its Community Health Insurance Scheme as being planned for National Rural Health Mission to meet the health care cost at individual levels.

A modest budget of 182,09,00,000 INR, would be required to start the oral health program in 5 years which can be increased in the subsequent planning commissions to cover the entire country & provide relief to our countrymen from the huge oro-dental disease burden.

### Expected Achievements and Goals

1. Establishment of a National, (35) State & (85) District Oral Health Cells for proper monitoring, planning of dental public health, interventional measures & research activities
2. Strengthening manpower & infrastructure at (255) PHC/ (85)CHC & (85) District hospitals & providing basic oral health care to the rural population
3. To reduce the prevalence and incidence of oral diseases in the country
4. To reduce the mortality and morbidity of oral diseases
5. Early detection of oral cancers – from stage 3 & 4 to stage 1& 2

The summary table for expected outcome is given in the following table.

Oral Diseases	Age Group	Prevalence 2005*	Expected Status by 2012
Dental Caries	All	40 - 50%	<30%
Periodontal Diseases (relatively Severe)	15+	45%	<35%
Malocclusion	9-14	32.5%	25%
Oral Cancer	35+	0.03%	0.02%
Fluorosis	All	5.5%	4%

### Background

Oral health is an integral part of general health. Oral and Dental diseases are universal, affecting all age groups and both sexes, across the world. Poor oral health not only affects these functions but can also have psychological impact and affect the quality of life of persons, community and nation. Periodontal infection (gum diseases) has been found to be associated with diabetes, cardio-vascular diseases, stroke, pulmonary infection, pre-term labour and low birth weight babies etc. Poor oral health can cause poor esthetics, affects mastication adversely,



causes a agonizing pain and can lead to loss of productivity due to loss of man-hours. However, Dental diseases are preventable to a great extent.

Recent data from isolated studies show that the Dental Caries prevalence ranges between 50-60% in children and somewhat higher prevalence has been reported in people above 35 years. The Periodontal diseases are prevalent in about 85-90% of the population; however, the severe form of the periodontitis affecting day-to-day activities has been reported in about 40-45% of the population. Malocclusion or irregular teeth have been reported in the range of 30-35% of 9-14 year old children.

Oral cancer is the most rapidly increasing disease of oral cavity which is not only affecting the function, quality of life, psychology and economy but if not checked will be a major cause of premature mortality in near future. The incidence of oral cancer has been reported to be very high in high-tobacco consuming regions of the country like N-E states and Andhra Pradesh. It is worth to mention here that not only oral cancer but oral pre-cancerous conditions are also rapidly increasing day by day in the country affecting life of the people. About one third of all cancer occurring in the body are in the head and neck region and can be attributed to the use of cancer and about 90% of them are preventable.

Oral Trauma is increasing daily due to rapid urbanization and increase in violence. Most of the time early childhood blow on chin causing fracture of mandibular condyle go un-noticed resulting in TM facial asymmetry and Joint ankylosis. We need to incorporate instructions for oral trauma prevention and early recognition in our public health strategies.

In addition to the crippling of oral cavities, the oral diseases can also have adverse effects on the vital organs of the body. The pus oozing pockets of periodontal disease of adults act as a focus of infection for other vital organs of the body such as kidney, heart, lungs, brain etc. The dental caries with its crippling effect on the functional component of oral cavity can lead to more malnutrition, as the young adults would not be able to chew any coarse food available to them. Several recent studies have demonstrated a relationship between periodontal disease and infectious endocarditis, coronary artery diseases, stroke, respiratory disease and have higher risk of delivering pre-term low birth-weight input. Oral manifestations and spread of infections related to HIV, hepatitis and tuberculosis are also on the increase.

The elderly are suffering from tooth loss and mobility of teeth affecting their nutrition and finally overall health. We need to incorporate oral health services for elderly in all our geriatric medicine programmes.



## **Status of Oral Health Care in the Country**

Oral Health Care has not been given sufficient importance in our country. Most of the District hospitals have a post of dental surgeons but they lack in equipment, machinery and material. Even where the equipment exists, the maintenance is poor, hence service delivery is affected. Draft resolution on Oral Health Policy was accepted in 1995 in the meeting of Central Council of Health Ministers as an integral part of National Health Policy but it has not been reflected in the revised National Health Policy 2002. Moreover, recently launched National Rural Health Mission does not have any mention of oral health services or their up gradation.

As per the data from Dental Council of India, there are approximately 79,000 dentists for the population of about 109 million, with dentist: population ratio of 1:8,000 in urban areas and 1:1, 50,000 in rural areas. There are less than 5% dental surgeons in Government services, out of which majority are unable to provide services due to reasons mentioned above. Most of the rural areas in the country do not have any Dental Services and hence about 76% of the rural population remains totally neglected.

## **Impact of Oral health on General Health**

It has now emerged from various research studies that Periodontal disease (Gum disease) has far reaching effects on various systemic diseases like Low birth weight, Diabetes, Heart disease, Respiratory diseases, Stroke, Atherosclerosis etc. Periodontal diseases acts as source of large number of bacteria, cytokines and toxins, which when released into blood stream, increase the risk for above-mentioned systemic diseases. Thus by maintaining a good oral hygiene and preventing periodontal diseases we can avoid the risk for many of these systemic diseases.

Due to very high incidence of periodontal diseases in India there is strong need to educate people about its systemic effects. Current research indicates that –

- About 18 % of Pre-term low birth weight deliveries are due to periodontal disease in pregnant mothers
- Patients with periodontal disease are at 2-4 times greater risk for heart attack regardless of tobacco use
- Diabetic patients having periodontitis have 3.2 times increased risk of cardio renal mortality
- Periodontitis is also likely to increase the risk for many other diseases like Chronic Obstructive Pulmonary Disease, Coronary Artery Disease, Atherosclerosis, MI, Stroke, Osteoporosis etc.
- Periodontal patients are more likely to develop stress related disorders due to altered cortisol levels.



## Impact of Oral health on Economy

**A) The cost involved:** The treatment of dental disease is very expensive and time consuming. For a rough estimate, if we consider only children below 14 years for restorative treatment of dental caries having average decayed tooth to be 2, it would require about 5200 crores rupees (statistics below) excluding the salary and infrastructure.

Population of India about – 109 Million

The children in age range of up to 14 years – 33.6 crores

But we consider a rough estimate between 3-14 years to be – 28 crores

Total number of cavities (average 2 Decayed teeth per child) – 54 crores

Cost of filling per cavity (approximately 100 rupees each) – 5400 crores excluding salary and infrastructure.

**B) Loss of Working Hours** - The loss of working hours is especially important in Indian context since about 25-30% of the population is below poverty line and depends on daily earnings. The families where a worker is the only earning member, the situation can be even worse if the earning member suffer from dental ailment stopping him from working for one full day. This could lead to serious situation for food and daily needs for the whole family of 4 or 5 persons.

Though the dental diseases are not considered to be life threatening but they seriously affect day to day activities. When a person is suffering from dental pain due to any of the mentioned dental diseases, he is amenable to loss of concentration at his work or may not be able to work at all. Though the factor does not seem to be important but it has serious economic implications on the country. In India, we do not have statistical data but it can be estimated by the data of other countries; for example in USA in the year 1988 on an average, 8 working hours/person were lost due to either dental problems or appointment with dentist. Hence, the social and economic implications due to ignorance of oral health can very well be appreciated.

## Impact of Oral health on Quality of Life

Good oral health allows the person to smile, eat and chew the food of his/her liking, and communicate effectively without inhibitions resulting from poor health (Compromised aesthetics & bad breath can affect social communication, poor mastication can restrict choice of food items due to loss of multiple teeth). Oral diseases can restrict activities at school and at work place and can have significant psychological impact, affecting the Quality of Life.

## Magnitude of Oral Health Challenges

After analysing the epidemiological data on Oral Diseases undertaken by the National Commission on Macroeconomics and Health, Ministry of H & FW and



Min. of Finance, Government of India, the following table for the present prevalence and future projections were arrived at.

### Baseline and projected scenario for dental health in India, 2000-2015

Based on the prevalence data compiled in this paper, the table below assesses the trends of different oral and dental diseases and gives projection for the next 10 years.

Categories	Prevalence (%)	Age group (Years)	Prevalence (in lakh)			
			2000	2005	2010	2015
Dental caries	50.00	All	5084.7	5484.6	5869	6231.8
Periodontal diseases (Relatively severe)	45.00	15+	2957.6	3190.2	3413.8	3624.8
Malocclusion	32.50	9-14	401.4	433.0	463.3	491.9
Oral cancer	0.03	35+	NA	0.6	NA	0.8
Fluorosis	5.50	All	559.3	603.3	645.6	685.5
Severe fluorosis	1.0	All	101.7	109.7	117.4	124.6

*Note:* It is assumed that the prevalence rate will remain unchanged over the period of projections, except for oral cancer and periodontal diseases, due to the rampant use of *paan masala* and *gutka* by persons of all age groups and both the sexes. If minor periodontal diseases are included, the proportion of population above the age of 15 years with this disease could be 80%-90%. The projections may best be viewed as upper bound except for severe periodontal diseases and oral cancers, which are lower bound. *Source:* Shah 2004a and 2004b

### Review of the status of ongoing centrally sponsored Project

#### National Oral Health Care Program

The National Oral Health Care Programme is a pilot project on Oral Health started in the year 1999 by Dte. GHS and the Ministry of Health & Family Welfare. Under this project, All India Institute of Medical Sciences has been made a nodal agency.

Initial funding for the project was received from the Ministry of H & FW and later, the budget was merged with AIIMS budget. The project was reviewed by National Institute for Health and Family Welfare in 2004 and approved with few recommendations. The programme was initially implemented in 5 states, namely, **Maharashtra, Punjab, Delhi, Kerala & N E states.**

The project focussed on three components, namely



- (i) Oral Health Education by involving health workers, school children, teachers and mass media
- (ii) Production of IEC Material for awareness generation and
- (iii) Formulation of modules for trainers (Dental Surgeons), Health Workers and Schoolteachers.

Thus the main focus of this project is on **primary prevention**, which is the most cost effective, appropriate and desirable.

Presently following **modules** are developed under the programme:

1. Training and Re-orientation of Dental Surgeons
2. Training of Health Workers
3. Training of School teachers

Following IEC materials have been developed under the programme:

1. An educative film on Oral Health entitled "Smile Please" (Kripaya Muskuraiye in Hindi)
2. Implementation strategies for the Central and State Govt.
3. Training Manual on Oral health for Health Workers (in Hindi and English)
4. Training Manual on Oral health for School teachers (in Hindi and English)
5. Educative Posters on Oral health (in Hindi and English)

### **Achievements of the project**

**School Dental Health** – 3 million children of 6000 schools across 72 cities and 16 states covered for oral health education in collaboration with Indian Dental Association

Training & Reorientation Programmes conducted for Dental Surgeons – 9

Training Programmes conducted for Health Workers - 17

Training Programmes conducted for School Teachers – 8

The project was reviewed by **National Institute for Health and Family Welfare** in 2004 and approved with few recommendations which are as under:

1. National Oral Health Care Program- Goals & Implementation Strategies: The prototype document gives an extensive conceptual framework for future development of Dental Health services in the country. This would be extremely useful to planners & program managers. The document highlights the high magnitude of dental & oral health problems along with the acute shortage of dental manpower & equipment in the country.
2. The entire National Oral Health Care program be divided into several implementation phases, giving reasonable time frames & specific goals to be



- achieved at the end of each phase. Since dental health infrastructure, facilities, resources & dental problems may vary from state to state, state or region specific action strategies may be formulated. The resources available with the states should be utilized & sustainability mechanisms be worked out. The centre can provide technical support & one time financial support
3. At the central level in the Directorate General of Health Services, following committees be formed:
    - a. Central Steering Committee: To coordinate with the states under the chairmanship of Secretary Health. The members could be the State Health Secretaries & representative of officers from Ministry of Health & Family Welfare.
    - b. Central Technical Committee: To provide technical support under the chairmanship of Director General Health Services from State Directorates, National Level dental experts etc.
    - c. Central Monitoring & Evaluation Cell: This may be formed at any apex institute like AIIMS, New Delhi. This should have adequate staff for monitoring the program & giving feed back to the Central Technical Committee.
  4. At the state level as per the available infrastructure & resources, suitable structures should be developed. The responsibility for the implementation should primarily rest with the state governments. The states may consider the followings to sustain the program:
    - a. Issuing instructions to education departments to include appropriate oral health education material in the school curriculum & books
    - b. The training of schoolteachers can be done under the school health program, using & modifying the prototype manual prepared in the pilot phase.
    - c. The training of health workers on dental health issues can be linked with current training programs being implemented in the states. The basic training of health workers can include relevant contents on dental health as developed in the prototype manual for training of health workers under the present pilot project.
    - d. Strengthening & development of dental health services could be a long term measure. The states can prioritise & strengthen infrastructure at PHC/CHC & district hospitals as per the availability of resources. The model is given in the prototype. The central government may provide some funds for the establishment of basic infrastructure & facilities in the states, either through its own funds or through external funding sources.
  5. Training manuals & IEC materials:
    - a. All through these training documents contain technical details of important dental & oral health problems. Yet some modification may be required, while implementation by the concerned states as per the local situations.
    - b. The IEC material may further be modified in consultation with expert agencies like Central Health Education Bureau, Indian Institute of



Mass Communication, media division of MoHFW. The messages on oral & dental health should be merged with other IEC materials being developed by the centre & state governments.

## **Strategies for Future**

### **Components**

#### **1. Oral Health Education**

Use of Primary Health Care Approach - It is recommended that to spread oral health awareness, existing infra-structure should be strengthened. Multipurpose health workers (MPW) should be trained to impart oral health education, provide basic pain relief and be able to refer the case for further investigation and treatment.

Development of IEC material - Oral Health Education materials like charts, posters, pamphlets, models and comics should be developed to be used in community and schools. Special plays, skits, poems and songs on Oral Health should be developed as part of the folk media to spread Oral Health awareness in rural areas.

Use of Mass Media - It is recommended that to spread the message of oral health to the masses, all the three media of communication i.e. audio-visual, print and folk media should be utilized to the maximum. For children and people with low literacy level, these messages should be more pictorial than in writing. Central Health Education Bureau shall be involved to formulate IEC material.

Networking with other voluntary and health organisations - The number of other health workers such as family planning workers, social health workers, Anganwadi workers and number of voluntary organisations such as Rotary Club, Lion's Club and other health organisations such as Child Welfare are operating and active in various urban areas. These are very potential sources which can be utilised for the delivery of oral health education.

Networking with other allied departments - The Department of Education and Social Welfare should be involved to impart correct oral health promoting information to school children at an early age which would help to develop proper attitudes in them. It would be preferable to include chapters giving adequate knowledge about oral diseases and their prevention in the text books of class III, V and VII.

Similarly, collaboration with the Ministry of Youth affairs and Sports and tie up with NSS can be utilized for spread of oral health education amongst youth



## **2. Formulation of Basic Package on Oral Health (BPOC) for the country and its implementation**

A prevention and interventional approach towards Oral Health was recently launched at Netherlands in 2003, called Fernery -Voltaire Declaration. It consists of 3 components – Oral Urgent Treatment (OUT), Affordable Fluoride Treatment (AFT) and Atraumatic Restorative Treatment (ART). To implement Basic Package of Oral Care in India, extensive discussions with oral health professionals, dental associations and dental council would be required to accept this programme, and extensive training programme will have to be designed to train appropriate manpower to deliver the package to the people. Alternately, vast resources of trained dental surgeons (Approx 80,000 existing today and about 13,000 graduating each year) could be utilized if proper incentives are given. It would meet the need of basic oral care of rural population.

ART can be performed even where electricity is not available; it is low-cost and can be performed without a dental chair and drill. ART should be incorporated in community based oral health care services.

It is proposed to implement the programme in two phases beginning with five states in the first phase and then scaling up the operations all over the country in second phase. Both the phases will be completed during the 11<sup>th</sup> Five Year Plan. During the first phase, apart from implementation of the programme interventions, operations research, situation analysis and setting up of institutional framework will be undertaken so that during the second phase, scaling –up can be undertaken.

## **3. Manpower & Infra-structure requirement for Primary & Secondary prevention of Oral Diseases**

**Administrative set-up** at the National, State and District levels need to be strengthened for planning, implementation, monitoring and evaluation of oral and dental health programmes in the State. Definite norms need to be laid down for establishment of Dental care facilities at different levels in terms of manpower, space, equipments, instruments & consumables. Existing dental facilities at various levels need to be upgraded with the latest equipments and materials as per established norms.

**Mobile Dental Clinics** to provide on-the-spot diagnostic, preventive, interceptive and curative services to the people and school children in far-flung rural areas of the state should be made available. There should be at least 3-4 mobile dental vans at each district level catering to a population of 4, 50,000 to 5, and 00,000. Each mobile dental van should have two dental chairs and units, each with air-turbine, micro-motor, ultra-sonic scalers and other equipments. There should be three dental surgeons, one dental hygienist and three chair-side assistants posted with each mobile dental van. Two dental surgeons sequence should look after



restorative and curative work of the patients whereas one should devote time on the primary prevention of dental diseases through organising lectures, participating in discussion using audio-visual aids to educate and motivate the rural masses to follow the primary preventive measures.

**Strengthening School Health Services** - Oral health activities in schools is very effective in reducing the prevalence of oral diseases. The population of school age group in the country constitutes approx. 34 % of the population. Children learn early and they have long remaining life. Good oral habits and healthy behaviours learnt early in life, would help reduce the disease burden in later life. They also carry the health messages learnt in school to their homes and spread the knowledge to their parents, grand-parents and siblings. At least one dental surgeon/ district should be appointed for School Dental Health program exclusively to perform the following:

- Oral health education
- Regular dental check ups
- Demonstration of correct brushing technique
- Supervised fluoride mouth rinsing
- Fluoride varnish application
- Fissure sealants
- ART
- Provide primary treatment measures where needed (restorations and extractions etc.)

**Continuing Dental Education Programme** - Each state under the Directorate of Health Services (dental) must identify one or two training centres in the state. The directorate must conduct at least one CDE programme every 6 months. This CDE programme must be compulsory for each dental surgeon serving in the state health services. Through these CDE programmes the dental surgeon's knowledge will be updated regarding the most recent concepts of dental procedures as well as on various methods and approaches of preventive and curative aspects of the dental diseases. Directorate should evolve a system to objectively evaluate the knowledge and skills acquired such as credit points, to ensure active interest of dental surgeons in these CDE programmes. Such CDE programmes should also be organized for private practitioners.

**Guiding the Infection Control in Dental Practice** - With emerging infections and threat from blood borne transmissible diseases, it is very important for the country to have safe dental practice guidelines. We should have a structured study to find out the magnitude of challenge, barriers in non-practicing of correct infection control and waste disposal methods among dental professionals. Based on the findings of the study, country specific infection control guidelines for dental practices may be evolved through experimentation and economic implication analysis. It is essential that infection control policy is framed for India which is realistic, affordable and practical.



## Capacity building & monitoring dental public health & research through National, State & District Oral Health Cells

Capacity building & operational aspect in terms of National/State/District Oral Health Cells

National Oral Health Cell (NOHC)	Located at Directorate General Health Services/MoHFW
	<ul style="list-style-type: none"> <li>• (2) Two dental surgeon who either have MDS degree in Community Dentistry &amp; have relevant experience at National level or BDS having at least 5 years experience in the field of oral health research or community dental health planning at National level               <ul style="list-style-type: none"> <li>○ Shall find out the priorities as per the needs of population</li> <li>○ Make broad guidelines for the implementation of National Oral Health Care Program</li> <li>○ Coordinate with the State Oral Health Cell (SOHC)</li> <li>○ Conduct required training workshops at national &amp; state levels</li> <li>○ Plan out the oral health research priorities &amp; oral public health for the country</li> <li>○ Create a data base on oral health at central level &amp; formulate research priorities pertaining to the need</li> <li>○ Bring out uniform &amp; standardized IEC material which can be translated into regional languages by State Oral Health Cell (SOHC)</li> <li>○ Formulate guidelines for the proper utilization of dental manpower &amp; resource materials at the PHC/CHC/SDH &amp; District hospitals in accordance with the SOHC</li> <li>○ Evaluate &amp; monitor the performance of SOHC &amp; District Oral Health Cell (DOHC) from time to time for the smooth operation &amp; adequate funding as per the performance</li> <li>○ Ensure proper funding to the different (SOHC)</li> <li>○ Coordinate with the bodies like WHO, DCI (HO) &amp; IDA (HO) to avoid duplication of work</li> </ul> </li> <li>• (2) Clerical staff</li> <li>• (1) Data Entry Operator</li> <li>• (1) Office Attendant</li> </ul>
State Oral Health Cell (SOHC)	Located at State Directorate Health Services/MoHFW
	<ul style="list-style-type: none"> <li>• (2) Two dental surgeon who have relevant experience at National level &amp; have at least 5 years experience in the field of oral health research or community dental health planning at State/National level               <ul style="list-style-type: none"> <li>○ Shall find out the priorities as per the needs of population in the state &amp; address to the NOHC</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>○ Coordinate with the NOHC</li> <li>○ Create a data base on oral health at state level &amp; formulate research priorities pertaining to the need of the local population</li> <li>○ Shall visit the PHC/CHC/SDH/DH from time to time &amp; formulate strategies to take oral health to the rural level &amp; involve gram panchayats</li> <li>○ Coordinate with the dental colleges of the state for the effective utilization of the community dental program, help them with required IEC materials &amp; motivate them to adopt PHC's/CHC's of that district</li> <li>○ Evaluate &amp; monitor the performance of District Oral Health Cell (DOHC) from time to time for the smooth operation &amp; adequate funding as per the performance</li> <li>○ District Oral Health Cell (DOHC) from time to time for the smooth operation</li> <li>○ Ensure proper funding to the (DOHC)</li> <li>○ Coordinate with the bodies like DCI (SO) &amp; IDA (SO) to avoid duplication of work</li> </ul> <ul style="list-style-type: none"> <li>• (2) Clerical staff</li> <li>• (1) Data Entry Operator</li> <li>• (1) Office Attendant</li> </ul>
<b>District Oral Health cell (DOHC)</b>	<b>Located in District Hospitals</b>
	<ul style="list-style-type: none"> <li>• (1) Two dental surgeon having at least 5 years experience in the field of oral health research or community dental health planning <ul style="list-style-type: none"> <li>○ The cell should also include employed dental surgeons of the district hospital &amp; have members from district administration for the smooth functioning</li> <li>○ Shall find out the priorities as per the needs of population of the district &amp; address to the SOHC</li> <li>○ Conduct awareness camps at district, sub-divisional, CHC/PHC &amp; village level</li> <li>○ Coordinate with the SOHC</li> <li>○ Create a data base on oral health at district level &amp; formulate research priorities pertaining to the need of the local population</li> <li>○ Coordinate the financial aspects as regards to expenditure in terms of salary/equipment &amp; material</li> <li>○ Shall visit the PHC/CHC/SDH/DH from time to time &amp; formulate strategies to take oral health to the rural level &amp; involve gram panchayats</li> <li>○ Coordinate with the dental colleges of the district for the effective utilization of the community dental program, help them with required IEC materials &amp; motivate them to adopt PHC's/CHC's of that district</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Coordinate with the local branches of IDA</li> <li>• One School Dental Officer, having at least 3 years experience in the field of oral health research or community dental health planning at District level <ul style="list-style-type: none"> <li>○ Shall coordinate with the key-teachers of the school for oral hygiene improvement of the children</li> <li>○ Conduct dental awareness lectures in the assembly/group of children</li> <li>○ Coordinate in the oral screening of children with the help of DOHC</li> </ul> </li> <li>• (4) Dental hygienist at the level of CHC/PHC per district</li> <li>• (1) Clerical staff</li> <li>• (1) Data Entry Operator</li> <li>• (1) Office attendant</li> </ul>
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### Research priorities

In the 11<sup>th</sup> Five year plan, though the main focus will be on primary prevention of various oro dental diseases, research is also one of the main subject to be focused on. Till today India does not have an Institute or a Body to direct dental research in the country, it is also suggested to set up apex bodies of national importance in All India Institute of Medical Sciences on the pattern of National Institute of Dental Research (NIDR) in USA. These bodies will help in conducting meaningful research applicable to Indian conditions and will also help in assessing the magnitude of problems on longitudinal basis.

Following areas of research are being suggested to be kept at priority for dental research in the country.

1. New methods of prevention of dental caries and periodontal diseases
2. Epidemiological research on oral health and socioeconomic factors
3. Geriatric oral health, Nutrition and oral health
4. Basic research on immunology of dental caries, periodontal diseases and oral cancer.
5. Use of Atraumatic Restorative Treatment (ART) in Dental Caries Control at Community Level
6. Oral Cancer epidemiology and impact of intervention.
7. Role of nutritional supplements on prevention of malignant transformation of oral premalignant lesions – Vit. A, Iron and folic acid.
8. Various bone augmentation techniques in periodontal / pre prosthetic surgeries.
9. Different methods of rehabilitation for children with cleft lip and palate.
10. Etiopathogenesis and Management of Trigeminal Neuralgia.  
-Efficacy of TENS, Low-Level Laser Treatment (LLLT).
11. Basic and clinical research on dental implants and implant supported prosthesis.



12. Development and basic research on esthetic restorative materials and techniques.
13. Effect of oral health on systemic diseases and vice-versa.

The Research should be directed towards national health needs and in accordance with public health or clinical relevance.

## 7. Integration of Oral Health Programs into National Rural Health Mission

### Operational Aspects in regards to NRHM

S.No.	Priorities	Constraints	Action to overcome constraints
1	Functional facilities- Establishing fully functional SHC's/ PHC's/ CHC's/ SD/ District Hospitals	<ul style="list-style-type: none"> <li>• Dilapidated/Absent physical infrastructure</li> <li>• Material shortage</li> <li>• Dysfunctional equipments &amp; instruments</li> </ul>	<ul style="list-style-type: none"> <li>• SUB HEALTH CENTER: Copies of training materials as relevant to MHW/FHW/ASHA, IEC materials for dissemination in the general population</li> <li>• PH CENTER: Hydraulic Chair Heavy duty torches, hand scalers &amp; hand instruments for ART, cements &amp; heat based autoclaves</li> <li>• CHC/SD Hospital: Hydraulic Chair, Heavy duty torches, hand scalers &amp; hand instruments for ART, cements, basic set of extraction forceps &amp; heat based autoclaves</li> <li>• District Hospitals: Electric operated dental chair, ultra sonic scalers, hand instruments for ART, cements, basic set of extraction forceps and surgical instruments, endodontic instruments, light cure composite gun &amp; material</li> </ul>
2	Increasing & Improving Human resources in rural areas	<ul style="list-style-type: none"> <li>• Non-availability of doctors &amp; paramedics</li> <li>• Shortage of ANM's/MPW's</li> <li>• No system of appraisal</li> </ul>	<ul style="list-style-type: none"> <li>• SUB HEALTH CENTER: Male &amp; Female Health Workers &amp; ASHA should provide oral health awareness &amp; education to</li> </ul>

		with incentives/disincentives for good/poor performance & governance related problems	<p>the community, provide pain relief &amp; appropriate referrals</p> <ul style="list-style-type: none"> <li>• PH CENTER: Oral hygienist should be made available. Till the time all the PHC's could have OH's, nurses can be trained to carry out the basic dental procedures like hand scaling &amp; ART</li> <li>• CHC/SD Hospital: Oral Hygienist, qualified dental surgeon</li> <li>• District Hospitals: qualified dental surgeon BDS/MDS</li> <li>• Dental Surgeons should be provided incentives if they opt for joining CHC's/SDH</li> <li>• Supporting staffs like Dental Hygienists and Laboratory Technicians etc. should be made available</li> </ul>
3	<b>Accountable Health Delivery</b>	<ul style="list-style-type: none"> <li>• Panchayati Raj Institutions/ user groups have little say in health system</li> <li>• No village level unit of delivery</li> </ul>	<ul style="list-style-type: none"> <li>• Control &amp; management of dental health facilities</li> <li>• Mobile Dental van can provide village level services</li> <li>• Effective implementation of School Oral Health Programmes in villages</li> </ul>
4	<b>Action for preventive &amp; promotive health</b>	<ul style="list-style-type: none"> <li>• No action on promoting oral hygiene, control of tobacco</li> <li>• No organized school oral health program</li> <li>• Absence of oral health counseling &amp; early detection of oral diseases</li> </ul>	<ul style="list-style-type: none"> <li>• SUB HEALTH CENTER: Proper training should be provided to ASHA for the oral health awareness among village people early identification /referral</li> <li>• PH CENTER: Dental hygienists should be given the responsibility to treat gingival/ minor periodontal ailments &amp; training to perform ART</li> <li>• CH CENTER: Dental Surgeon should be given the additional responsibility to monitor &amp; review the progress at PHC's</li> </ul>



			<ul style="list-style-type: none"> <li>o Dental surgeon should visit the schools of his/her area for promoting oral health</li> <li>o Dental surgeon should perform tobacco cessation activities to make people aware &amp; help in the reduction of oral pre-cancerous lesions &amp; cancer</li> <li>• SD/District Hospital: Dental surgeons should plan /implement/monitor the activities related to oral health awareness in general population &amp; school in collaboration with other members of NRHM team</li> <li>o Dental team from District Oral Health cell on a weekly basis should visit CHC's for re-orientation program of staff &amp; promoting awareness</li> </ul>
5	Disease Surveillance	<ul style="list-style-type: none"> <li>• No place of oral disease surveillance in the present system</li> </ul>	<ul style="list-style-type: none"> <li>• Oral health problems to be included in the IDSP at all levels.</li> </ul>
6	Planning & monitoring with community ownership	<ul style="list-style-type: none"> <li>• No local planning, no village health registers</li> </ul>	<ul style="list-style-type: none"> <li>• Service deliveries can be maintained in dental health registers at PHC/CHC for any particular village &amp; can be analyzed on half yearly basis for local planning</li> </ul>
7	Convergence of programmes for combating/preventing HIV/AIDS chronic diseases, malnutrition etc.	<ul style="list-style-type: none"> <li>• No stress on prevention of oral diseases by simple means</li> </ul>	<ul style="list-style-type: none"> <li>• Preventive instructions based on Common Risk Factor Approach (CRFA) since the causative factors for many oral problems are common with Diabetes, CVD, and Obesity etc.</li> <li>• Making people aware of effect of poor oral health on general health, nutrition and maternal health</li> <li>• Awareness regarding effect of tobacco on oral health</li> </ul>

## Budgeting

- Purely contractual jobs, based on performance to the dental surgeons working at CHC/SDH/District Hospitals with incentives as reward.
- Purely contractual jobs, based on performance to the dental hygienists working at PHC/CHC
- Infrastructure + consumable (dental material) cost for PHC/CHC/SDH/D Hospital
- IEC material & Training manuals (formulation/printing/dissemination)
- Mobile Dental Vans at District Hospitals
- Research

## Expected Achievements and Goals

1. Establishment of a National, (35) State & (85) District Oral Health Cells for proper monitoring, planning of dental public health, interventional measures & research activities
2. Strengthening manpower & infrastructure at (255) PHC/ (85)CHC & (85) District hospitals & providing basic oral health care to the rural population
3. To reduce the prevalence and incidence of oral diseases in the country
4. To reduce the mortality and morbidity of oral diseases
5. Early detection of oral cancers – from stage 3 & 4 to stage 1& 2

The summary table for expected outcome is given in the following table.

Oral Diseases	Age Group	Prevalence 2005*	Expected Status by 2012
Dental Caries	All	40 - 50%	<30%
Periodontal Diseases (relatively Severe)	15+	45%	<35%
Malocclusion	9-14	32.5%	25%
Oral Cancer	35+	0.03%	0.02%
Fluorosis	All	5.5%	4%

## Budget

### Pilot Phase: 2007- 08

In preparatory phase following activities will be carried out –

- Establishment of National Oral Health Cell



- Establishment of 10 State Oral Health Cells (Arunachal Pradesh, Assam, Andhra Pradesh, Bihar, Himachal Pradesh, Maharashtra, Orissa, Rajasthan, Kerala, Tamilnadu)
- Establishment of 25 District Oral Health Cells
- Continued Dental Education meetings for health promotion at national and regional Centers

S.No.	Item	Cost	Total
1	<b>Establishment of National Oral Health cell (1) (NOHC)</b>		
	A. Two Dental surgeons (Consultants)	(40,000 X 2)	80,000
	B. Two Clerical staff	(10,000 X 2)	20,000
	C. One data entry operator	8,000	8,000
	D. One class IV employee	5,000	5,000
	Total salaries per month	A+B+C+D	1,13,000
	Total salaries per year	1,13,000X12	13,56,000
	Computer & Peripherals/IT communication equipments	4,00,000	4,00,000
	Furniture	1,00,000	1,00,000
	Maintenance of NOHC	1,50,000	1,50,000
	Travel of the consultants (2)	4,00,000	4,00,000
	IEC Material (Posters/Pamphlets/Video) Printing & Dissemination to SOHC	50,00,000	50,00,000
	Oral Health Research & Public Health Activities	50,00,000	50,00,000
			1,24,06,000
2	<b>Establishment of State Oral Health Centres (10) (SOHC)</b>		
	A. Two Dental surgeon (Consultants)	(30,000 X 2)	60,000
	B. One Clerical staff	10,000	10,000
	C. One data entry operator	8,000	8,000
	D. One class IV employee	5,000	5,000
	Total salaries per month	A+B+C+D	83,000
	Total salaries per year	83,000X12	9,96,000
	Salaries for 10 centres	9,96,000X10	99,60,000
	Computer & Peripherals/IT communication equipments	4,00,000X10	40,00,000
	Furniture	1,00,000X10	10,00,000
	Maintenance of SOHC	1,50,000X10	15,00,000
	Travel of the consultants (2)	4,00,000X10	40,00,000
	IEC Material (Posters/Pamphlets/Video) Printing in regional languages & Dissemination to DOHC	25,00,000X10	2,50,00,000
			4,54,60,000
3	<b>Establishment of District Oral Health Cell (25) (DOHC)</b>		
	A. Two Dental surgeon (1) Consultant & (1) School Dental Officer	(25,000 X 2)	50,000



	B. One Clerical staff	10,000	10,000
	C. One data entry operator	8,000	8,000
	D. One Driver cum office attendant	5,000	5,000
	Total salaries per month	A+B+C+D	73,000
	Total salaries per year for (1) district	73,000X12	8,76,000
	Total salaries per year for 25 districts	8,76,000X25 districts	21900000
	Consumable dental materials & other items for PHC/CHC/SDH/DH	25,00,000X25 districts	62500000
	Computer & Peripherals/IT communication equipments/	2,00,000X25 districts	5000000
	Mobile Dental Vans	16,00,000X25 districts	40000000
	Maintenance of Mobile Dental Van & Fuel	1,00,000X25 districts	2500000
	Furniture	1,00,000X25 districts	2500000
	Maintenance of DOHC	1,00,000X25 districts	2500000
	Travel of the consultants (2)	50,000X25 districts	1250000
	Dissemination of IEC to PHC/CHC/SDH/DH	25,000X25 districts	625000
			13,87,75,000
4,	<b>Strengthening Manpower at one CHC and 3 PHC's in one district of the state</b>		
	Salary of (4) Dental Hygienists per year	(8000X4X12)---	3,84,000
	Total Salary of 4 DH per year in (25) Districts	3,84,000X25	96,00,000
5	<b>Training Programs</b>		
	(1) National Level Training Workshop with representatives from the SOHC & appropriate Faculty (Dental) & representatives from DteGHS/MoHFW/DCI/IDA/WHO	5,00,000	5,00,000
	(10) State Level Training Workshop with representatives from the NOHC/DOHC & appropriate Faculty (Dental) & representatives from State Directorate/Ministry of Health of the state/State DCI/State IDA/WHO	5,00,000X10	50,00,000
			55,00,000

Item	Expenditure
Expenditure of NOHC	1,24,06,000
Expenditure of SOHC	4,54,60,000
Expenditure of DOHC	13,87,75,000
Salary at PHC/CHC	96,00,000
Training Program	55,00,000
	21,17,41,000



**Phase: 2008- 09**

In this phase following activities will be carried out –

- Continuation of oral health services at 10 State Oral Health Cell & 25 District Oral Health Cell taken up in the pilot phase
- Continued Dental Education meetings for health promotion at national and regional Centers

S.No.	Item	Cost	Total
1	<b>National Oral Health cell (1) (NOHC)</b>		
	A. Two Dental surgeons (Consultants)	(45,000 X 2)	90,000
	B. Two Clerical staff	(11,000 X 2)	22,000
	C. One data entry operator	9,000	9,000
	D. One class IV employee	6,000	6,000
	Total salaries per month	A+B+C+D	1,27,000
	Total salaries per year	1,27,000X12	15,24,000
	Maintenance of NOHC	1,50,000	1,50,000
	Travel of the consultants (2)	4,00,000	4,00,000
	IEC Material (Posters/Pamphlets/Video)	50,00,000	50,00,000
	Printing & Dissemination to SOHC		
	Oral Health Research & Public Health Activities	50,00,000	50,00,000
			1,20,74,000
2	<b>Expenditure of the existing State Oral Health Cell (10) (SOHC)</b>		
	A. Two Dental surgeon (Consultants)	(35,000 X 2)	70,000
	B. One Clerical staff	11,000	11,000
	C. One data entry operator	9,000	9,000
	D. One class IV employee	6,000	6,000
	Total salaries per month	A+B+C+D	96,000
	Total salaries per year	96,000X12	11,52,000
	Salaries for 10 centres	11,52,000X10	1,15,20,000
	Computer & Peripherals/IT communication equipments	-	-
	Furniture	-	-
	Maintenance of SOHC	1,50,000X10	15,00,000
	Travel of the consultants (2)	4,00,000X10	40,00,000
	IEC Material (Posters/Pamphlets/Video)	-	-
	g in regional languages & Dissemination to DOHC		
			1,70,20,000
3	<b>Expenditure on Existing District Oral Health Cells (25)</b>		
	A. Two Dental surgeon (1) Consultant & (1) School Dental Officer	(30,000 X 2)	60,000

	B. One Clerical staff	11,000	11,000
	C. One data entry operator	9,000	9,000
	D. One Driver cum office attendant	6,000	6,000
	Total salaries per month	A+B+C+D	36,000
	Total salaries per year for (1) district	86,000X12	10,32,000
	Total salaries per year for 25 districts	10,32,000X25 districts	2,58,00,000
	Consumable dental materials & other items for PHC/CHC/SDH/DH	25,00,000X25districts	6,25,00,000
	Computer & Peripherals/IT communication equipments	-	-
	Mobile Dental Vans	-	-
	Maintenance of Mobile Dental Van & Fuel	1,00,000X25 districts	25,00,000
	Furniture	-	-
	Maintenance of DOHC	1,00,000X25 districts	25,00,000
	Travel of the consultants (2)	50,000X 25 districts	12,50,000
	Dissemination of IEC to PHC/CHC/SDH/DH	25,000X 25 districts	6,25,000
			9,51,75,000
4,	<b>Strengthening Manpower at one CHC and 3 PHC's</b>		
	Salary of (4) Dental Hygienists per year	(9000X4X12)	4,32,000
	Total Salary of 4 DH per year in (25) Districts	4,32,000X25	1,08,00,000
5	<b>Training Programs</b>	10,00,000	10,00,000
	(1) National Level Training Workshop with representatives from the SOHC & appropriate Faculty (Dental) & representatives from DteGHS/MoHFW/DCI/IDA/WHO		
	(10) State Level Training Workshop with representatives from the NOHC/DOHC & appropriate Faculty (Dental) & representatives from State Directorate/Ministry of Health of the state/State DCI/State IDA/WHO	5,00,000X10	50,00,000
			60,00,000

Item	Expenditure
Expenditure of NOHC	1,20,74,000
Expenditure of Existing SOHC	1,70,20,000
Expenditure of Existing DOHC	9,51,75,000
Salary at PHC/CHC	1,08,00,000
Training Program	60,00,000
	14,10,69,000



**Phase: 2009- 10**

In this phase following activities will be carried out –

- Establishment of 10 State Oral Health Cells (Sikkim, Andman & Nicobar, Dadar & Nagar Haveli, Daman & Diu, Jharkhand, Tripura, Meghalaya, Madhya Pradesh, Uttaranchal, Goa)
- Establishment of 25 New District Oral Health Cells
- Continued Dental Education meetings for health promotion at national and regional Centers

S.No.	Item	Cost	Total
1	<b>National Oral Health cell (1) (NOHC)</b>		
	A. Two Dental surgeons (Consultants)	(50,000 X 2)	1,00,000
	B. Two Clerical staff	(12,000 X 2)	24,000
	C. One data entry operator	10,000	10,000
	D. One class IV employee	7,000	7,000
	Total salaries per month	A+B+C+D	1,41,000
	Total salaries per year	1,41,000X12	16,92,000
	Maintenance of NOHC	1,50,000	1,50,000
	Travel of the consultants (2)	4,00,000	4,00,000
	IEC Material (Posters/Pamphlets/Video)	50,00,000	50,00,000
	Printing & Dissemination to SOHC		
	Oral Health Research & Public Health Activities	50,00,000	50,00,000
			<b>1,22,42,000</b>
2	<b>Establishment of State Oral Health Centres (10) (SOHC)</b>		
	A. Two Dental surgeon (Consultants)	(40,000 X 2)	80,000
	B. One Clerical staff	12,000	12,000
	C. One data entry operator	10,000	10,000
	D. One class IV employee	7,000	7,000
	Total salaries per month	A+B+C+D	1,09,000
	Total salaries per year	1,09,000X12	13,08,000
	Salaries for 10 centres	13,08,000X10	1,30,80,000
	Computer & Peripherals/IT communication equipments/	4,00,000X10	40,00,000
	Furniture	1,00,000X10	10,00,000
	Maintenance of SOHC	1,50,000X10	15,00,000
	Travel of the consultants (2)	4,00,000X10	40,00,000
	Material (Posters/Pamphlets/Video)	15,00,000X10	150,00,000
	Printing in regional languages & Dissemination to DOHC		
			<b>3,85,80,000</b>
3	<b>Expenditure of the existing State Oral Health Cell (10) (SOHC)</b>		

	A. Two Dental surgeon (Consultants)	(40,000 X 2)	80,000
	B. One Clerical staff	12,000	12,000
	C. One data entry operator	10,000	10,000
	D. One class IV employee	7,000	7,000
	Total salaries per month	A+B+C+D	1,09,000
	Total salaries per year	1,09,000X12	13,80,000
	Salaries for 10 centres	13,80,000X10	1,30,80,000
	Computer & Peripherals/IT communication equipments	-	-
	Furniture	-	-
	Maintenance of SOHC	1,50,000X10	15,00,000
	Travel of the consultants (2)	4,00,000X10	40,00,000
	IEC Material (Posters/Pamphlets/Video) Printing in regional languages & Dissemination to DOHC	15,00,000X10	1,50,00,000
			<b>3,35,80,000</b>
<b>4</b>	<b>Establishment of new District Oral Health Cells (25)</b>		
	A. Two Dental surgeon (1) Consultant & (1) School Dental Officer	(35,000 X 2)	70,000
	B. One Clerical staff	12,000	12,000
	C. One data entry operator	10,000	10,000
	D. One Driver cum office attendant	7,000	7,000
	Total salaries per month	A+B+C+D	99,000
	Total salaries per year for (1) district	99,000X12	11,88,000
	Total salaries per year for 25 districts	11,88,000X25 districts	2,97,00,000
	Consumable dental materials & other items for PHC/CHC/SDH/DH	25,00,000X25districts	6,25,00,000
	Computer & Peripherals/IT communication equipments/	2,00,000X25 districts	50,00,000
	Mobile Dental Vans	16,00,000X25districts	4,00,00,000
	Maintenance of Mobile Dental Van & Fuel	1,00,000X25 districts	25,00,000
	Furniture	1,00,000X25 districts	25,00,000
	Maintenance of DOHC	1,00,000X25 districts	25,00,000
	Travel of the consultants (2)	50,000X25 districts	12,50,000
	Dissemination of IEC to PHC/CHC/SDH/DH	25,000X25 districts	6,25,000
			<b>14,65,75,000</b>
<b>5</b>	<b>Expenditure on Existing District Oral Health Cells (25)</b>		
	A. Two Dental surgeon (1) Consultant & (1) School Dental Officer	(35,000 X 2)	70,000
	B. One Clerical staff	12,000	12,000
	C. One data entry operator	10,000	10,000
	D. One Driver cum office attendant	7,000	7,000



	Total salaries per month	A+B+C+D	99,000
	Total salaries per year for (1) district	99,000X12	11,88,000
	Total salaries per year for 25 districts	11,88,000X25 districts	2,97,00,000
	Consumable dental materials & other items for PHC/CHC/SDH/DH	25,00,000X25districts	6,25,00,000
	Computer & Peripherals/IT communication equipments	-	-
	Mobile Dental Vans	-	-
	Maintenance of Mobile Dental Van & Fuel	1,00,000X25 districts	25,00,000
	Furniture	-	-
	Maintenance of DOHC	1,00,000X25 districts	25,00,000
	Travel of the consultants (2)	50,000X 25 districts	12,50,000
	Dissemination of IEC to PHC/CHC/SDH/DH	25,000X 25 districts	6,25,000
			9,90,75,000
6	<b>Strengthening Manpower at one CHC and 3 PHC's</b>		
	Salary of (4) Dental Hygienists per year	(10,000X4X12)	4,80,000
	Total Salary of 4 DH per year in (25) Districts	4,80,000X25	1,20,00,000
7	<b>Total salary of the existing (4) DH per year in existing (25) Districts</b>	4,80,000X25	1,20,00,000
7	<b>Workshop</b>	15,00,000	15,00,000
	1) National Level Training Workshop with representatives from the SOHC & appropriate Faculty (Dental) & representatives from DteGHS/MoHFW/DCI/IDAWHO		
	(10) State Level Training Workshop with representatives from the NOHC/DOHC & appropriate Faculty (Dental) & representatives from State Directorate/Ministry of Health of the state/State DCI/State IDAWHO	5,00,000X10	50,00,000
			65,00,000

Item	Expenditure
Expenditure of NOHC	1,22,42,000
Expenditure of (10) New SOHC	3,85,80,000
Expenditure of Existing SOHC	3,35,80,000
Expenditure of (25) New DOHC	14,65,75,000
Expenditure of (25) Existing DOHC	9,90,75,000
Salary payable to DH at (1) CHC & (3) PHC	1,20,00,000
Salary payable to DH at existing CHC & PHC	1,20,00,000
Training Program	65,00,000
	36,05,52,000

## Phase: 2010- 11

In this phase following activities will be carried out –

- Establishment of 10 State Oral Health Cells (Chandigarh, Uttar Pradesh, Jammu & Kashmir, Manipur, Nagaland, Mizoram, Chhattisgarh, Karnataka, Gujarat, Lakshadweep)
- Establishment of 25 New District Oral Health Cells
- Continued Dental Education meetings for health promotion at national and regional Centers

S.No.	Item	Cost	Total
1	<b>National Oral Health cell (1) (NOHC)</b>		
	A. Two Dental surgeons (Consultants)	(55,000 X 2)	1,10,000
	B. Two Clerical staff	(13,000 X 2)	26,000
	C. One data entry operator	11,000	11,000
	D. One class IV employee	8,000	8,000
	Total salaries per month	A+B+C+D	1,55,000
	Total salaries per year	1,55,000X12	18,60,000
	Maintenance of NOHC	1,50,000	1,50,000
	Travel of the consultants (2)	4,00,000	4,00,000
	IEC Material (Posters/Pamphlets/Video) Printing & Dissemination to SOHC	50,00,000	50,00,000
	Oral Health Research & Public Health Activities	50,00,000	50,00,000
			1,24,10,000
2	<b>Establishment of State Oral Health Centres (10) (SOHC)</b>		
	A. Two Dental surgeon (Consultants)	(45,000 X 2)	90,000
	B. One Clerical staff	13,000	13,000
	C. One data entry operator	11,000	13,000
	D. One class IV employee	8,000	8,000
	Total salaries per month	A+B+C+D	1,24,000
	Total salaries per year	1,24,000X12	14,88,000
	Salaries for 10 centres	14,88,000X10	1,48,80,000
	Computer & Peripherals/IT communication equipments	4,00,000X10	40,00,000
	Furniture	1,00,000X10	10,00,000
	Maintenance of SOHC	1,50,000X10	15,00,000
	Travel of the consultants (2)	4,00,000X10	40,00,000
	IEC Material (Posters/Pamphlets/Video) Printing in regional languages & Dissemination to DOHC	15,00,000X10	150,00,000
			4,03,80,000
3	<b>Expenditure of the existing State Oral Health Cell (20) (SOHC)</b>		



	A. Two Dental surgeon (Consultants)	(45,000 X 2)	90,000
	B. One Clerical staff	13,000	13,000
	C. One data entry operator	11,000	13,000
	D. One class IV employee	8,000	8,000
	Total salaries per month	A+B+C+D	1,24,000
	Total salaries per year	1,24,000X12	14,88,000
	Salaries for 20 centres	14,88,000X20	2,97,60,000
	Computer & Peripherals/IT communication equipments	-	-
	Furniture	-	-
	Maintenance of SOHC	1,50,000X20	30,00,000
	Travel of the consultants (2)	4,00,000X20	80,00,000
	IEC Material (Posters /Pamphlets /Video) Printing in regional languages & Dissemination to DOHC	15,00,000X20	3,00,00,000
			<b>7,07,60,000</b>
4	<b>Establishment of (25) New District Oral Health Cells (DOHC)</b>		
	A. Two Dental surgeon (1) Consultant & (1) School Dental Officer	(40,000 X 2)	80,000
	B. One Clerical staff	13,000	13,000
	C. One data entry operator	11,000	11,000
	D. One Driver cum office attendant	8,000	8,000
	Total salaries per month	A+B+C+D	1,12,000
	Total salaries per year for (1) district	1,12,000X12	13,44,000
	Total salaries per year for 25 districts	13,44,000X25 districts	3,37,00,000
	Consumable dental materials & other items for PHC/CHC/SDH/DH	25,00,000X25districts	6,25,00,000
	Computer & Peripherals/IT communication equipments/	2,00,000X25 districts	50,00,000
	Mobile Dental Vans	16,00,000X25districts	4,00,00,000
	Maintenance of Mobile Dental Van & Fuel	1,00,000X25 districts	25,00,000
	Furniture	1,00,000X25 districts	25,00,000
	Maintenance of DOHC	1,00,000X25 districts	25,00,000
	Travel of the consultants (2)	50,000X25 districts	12,50,000
	Dissemination of IEC to PHC/CHC/SDH/DH	25,000X25 districts	6,25,000
			<b>15,05,75,000</b>
5	<b>Expenditure on Existing District Oral Health Cells (50)</b>		
	A. Two Dental surgeon (1) Consultant & (1) School Dental Officer	(40,000 X 2)	80,000
	B. One Clerical staff	13,000	13,000
	C. One data entry operator	11,000	11,000
	D. One Driver cum office attendant	8,000	8,000
	Total salaries per month	A+B+C+D	1,12,000

	Total salaries per year for (1) district	1,12,000X12	13,44,000
	Total salaries per year for 25 districts	13,44,000X50 districts	6,72,00,000
	Consumable dental materials & other items for PHC/CHC/SDH/DH	25,00,000X50 districts	12,50,00,000
	Computer & Peripherals/IT communication equipments	-	-
	Mobile Dental Vans	-	-
	Maintenance of Mobile Dental Van & Fuel	1,00,000X50 districts	50,00,000
	Furniture	-	-
	Maintenance of DOHC	1,00,000X50 districts	50,00,000
	Travel of the consultants (2)	50,000X 50 districts	25,00,000
	Dissemination of IEC to PHC/CHC/SDH/DH	25,000X 50 districts	12,50,000
			20,59,50,000
6	<b>Strengthening Manpower at one CHC and 3 PHC's in each district</b>		
	Salary of (4) Dental Hygienists per year	(11,000X4X12)	5,28,000
	Total Salary of 4 DH per year in (25) Districts	5,28,000X25	1,32,00,000
7	<b>Total salary of the existing (4) DH per year in existing (50) Districts</b>	5,28,000X50	2,64,00,000
8	<b>Workshop</b>	15,00,000	15,00,000
	1) National Level Training Workshop with representatives from the SOHC & appropriate Faculty (Dental) & representatives from DteGHS/MoHFW/DCI/IDAWHO.		
	(10) State Level Training Workshop with representatives from the NOHC/DOHC & appropriate Faculty (Dental) & representatives from State Directorate/Ministry of Health of the state/State DCI/State IDAWHO	5,00,000X10	50,00,000
			65,00,000

Item	Expenditure
Expenditure of NOHC	1,24,10,000
Expenditure of (10) New SOHC	4,03,80,000
Expenditure of Existing (20) SOHC	7,07,60,000
Expenditure of (25) New DOHC	15,05,75,000
Expenditure of (50) Existing DOHC	20,59,50,000
Salary payable to DH at (1) CHC & (3) PHC	1,32,00,000
Salary payable to DH at existing CHC & PHC	2,64,00,000
Training Program	65,00,000
	52,61,75,000



	B. One Clerical staff	14,000	14,000
	C. One data entry operator	12,000	12,000
	D. One Driver cum office attendant	9,000	9,000
	Total salaries per month	A+B+C+D	1,25,000
	Total salaries per year for (1) district	1,25,000X12	15,00,000
	Total salaries per year for 75 districts	15,00,000X75 districts	11,25,00,000
	Consumable dental materials & other items for PHC/CHC/SDH/DH	25,00,000X75 districts	2,50,00,000
	Maintenance of Mobile Dental Van & Fuel	1,00,000X75 districts	75,00,000
	Maintenance of DOHC	1,00,000X75 districts	75,00,000
	Travel of the consultants (2)	50,000X75 districts	37,50,000
	Dissemination of IEC to PHC/CHC/SDH/DH	25,000X75 districts	18,75,000
			15, 81,25,000
6	<b>Strengthening Manpower at one CHC and 3 PHC's</b>		
	4 Dental Hygienists	(12,000X4X12)	5,76,000
	Total Salary of 4 DH in (10) Districts	5,76,000X10	57,60,0000
7	<b>Total salary of the existing (4) DH per year in existing (75) Districts</b>	5,76,000X75	4,32,00,000
8	<b>Workshop</b> 1) National Level Training Workshop with representatives from the SOHC & appropriate Faculty (Dental) & representatives from DteGHS/MoHFW/DCI/IDAWHO (10) State Level Training Workshop with representatives from the NOHC/DOHC & appropriate Faculty (Dental) & representatives from State Directorate/Ministry of Health of the state/State DCI/State IDAWHO	15,00,000          5,00,000X10	15,00,000          50,00,000
			65,00,000

Item	Expenditure
Expenditure of NOHC	1,25,78,000
Expenditure of (5) New SOHC	2,08,50,000
Expenditure of Existing (30) SOHC	11,01,00,000
Expenditure of (10) New DOHC	6,17,50,000
Expenditure of (75) Existing DOHC	15,81,25,000
Salary payable to DH at (1) CHC & (3) PHC	57,60,000
Salary payable to DH at existing CHC & PHC	4,32,00,000
Training Program	65,00,000
	58,13,63,000

# Total Budget required during the XI plan

Item of Expenditure	2007-08	2008-09	2009-10	2010-11	2011-12	Total (INR)
	(1) NOHC (10) SOHC (25) DOHC	(1) NOHC (10) SOHC (25) DOHC	(1) NOHC (20) SOHC (50) DOHC	(1) NOHC (30) SOHC (75) DOHC	(1) NOHC (35) SOHC (85) DOHC	
Expenditure at National Oral Health Cell (NOHC)	1,24,06,000	1,20,74,000	1,22,42,000	1,24,10,000	1,25,78,000	6,17,10,000
Salaries of the consultants & supporting staff	13,56,000	15,24,000	16,92,000	18,60,000	20,28,000	
Infrastructure & maintenance of cell	6,50,000	1,50,000	1,50,000	1,50,000	1,50,000	
Travel expenditure of consultants	4,00,000	4,00,000	4,00,000	4,00,000	4,00,000	
IEC Material (Concept/Printing/Audio-visuals/ Dissemination)	50,00,000	50,00,000	50,00,000	50,00,000	50,00,000	
Oral Health Research Activities	50,00,000	50,00,000	50,00,000	50,00,000	50,00,000	
Expenditure at State Oral Health Cell (SOHC)	4,54,60,000	1,70,20,000	7,21,60,000	11,11,40,000	13,09,50,000	37,67,30,000
Salaries of the consultants & supporting staff	99,60,000	1,15,20,000	2,61,60,000	4,46,40,000	5,67,00,000	
Infrastructure & maintenance of cell	65,00,000	15,00,000	80,00,000	95,00,000	77,50,000	
Travel expenditure of consultants	40,00,000	40,00,000	80,00,000	1,20,00,000	1,40,00,000	
IEC Material (Concept/ Translation /Printing/Audio-visuals/Dissemination)	2,50,00,000	-	3,00,00,000	4,50,00,000	5,25,00,000	
Expenditure at District Oral	13,87,75,000	9,51,75,000	24,56,50,000	35,65,25,000	38,23,75,000	121,85,00,000



Health Cell (DOHC)									
Salaries of the consultants & supporting staff	2,19,00,000	2,58,00,000	5,94,00,000	10,09,00,000	12,75,00,000				
Infrastructure & maintenance of cell	1,00,00,000	25,00,000	1,25,00,000	1,50,00,000	1,15,00,000				
Travel expenditure of consultants	12,50,000	12,50,000	25,00,000	37,50,000	42,50,000				
Equipments/Consumables (dental materials) for PHC/CHC/D Hospital	6,25,00,000	6,25,00,000	12,50,00,000	18,75,00,000	21,25,00,000				
Mobile Dental Van/ Maintenance & Fuel	4,25,00,000	25,00,000	4,50,00,000	4,75,00,000	2,45,00,000				
Dissemination of IEC to PHC/CHC/D Hospital	6,25,000	6,25,000	12,50,000	18,75,000	21,25,000				
Salary payable to Dental Hygienists at CHC & PHC of (1) district in each state	96,00,000	1,08,00,000	2,40,00,000	3,96,00,000	4,89,60,000				13,29,60,000
Training Program	55,00,000	60,00,000	65,00,000	65,00,000	65,00,000				3,10,00,000
National Level Training/ Continuing Dental Education	5,00,000	5,00,000	15,00,000	15,00,000	15,00,000				
State Level Training /Continuing Dental Education	50,00,000	50,00,000	50,00,000	50,00,000	50,00,000				
	21,17,41,000	14,10,69,000	36,05,52,000	52,61,75,000	58,13,63,000				182,09,00,000

Details provided in yearly budget

## Justifications

1) To assess the estimated disease burden due to non communicable diseases, review the source of data, its accuracy, reliability and problems in making estimates, and suggest methods for improvement in the 11<sup>th</sup> Plan period.

Oral diseases have a great impact on systemic health. It is now established that periodontal diseases (Gum disease) has far reaching effects on various systemic diseases like Low birth weight, Diabetes, Heart disease, Respiratory diseases, Stroke, Atherosclerosis etc. Tooth loss due to gum diseases and dental caries cause esthetic, functional, nutritional and psychological problems. Oral cancer prevalence is highest in India, causing high morbidity and mortality.

### Baseline and projected scenario for dental health in India, 2000-2015

Based on the prevalence data compiled in this paper, the table below assesses the trends of different oral and dental diseases and gives projection for the next 10 years.

Categories	Prevalence (%)	Age group (Years)	Prevalence (in lakh)			
			2000	2005	2010	2015
Dental caries	50.00	All	5084.7	5484.6	5869	6231.8
Periodontal diseases (Relatively severe)	45.00	15+	2957.6	3190.2	3413.8	3624.8
Malocclusion	32.50	9-14	401.4	433.0	463.3	491.9
Oral cancer	0.03	35+	NA	0.6	NA	0.8
Fluorosis	5.50	All	559.3	603.3	645.6	685.5
Severe fluorosis	1.0	All	101.7	109.7	117.4	124.6

Note: It is assumed that the prevalence rate will remain unchanged over the period of projections, except for oral cancer and periodontal diseases, due to the rampant use of *paan* masala and *gutka* by persons of all age groups and both the sexes. If minor periodontal diseases are included, the proportion of population above the age of 15 years with this disease could be 80%-90%. The projections may best be viewed as upper bound except for severe periodontal diseases and oral cancers, which are lower bound.

(Source: Shah 2004a and 2004b, In Burden of Oral diseases, National Commission on Macroeconomics and Health, Min. of H & FW, Govt. of India, 2004)



2) To review the status of ongoing Central sector/ Centrally sponsored disease control programmes for NCD and suggest mechanism for developing and implementing a non communicable disease prevention, detection and management programmes during the 11<sup>th</sup> Plan period through the primary, secondary, tertiary and super specialty levels on Govt., Voluntary and Private sector healthcare network.

## 2 a. Review of the status of ongoing centrally sponsored Project

### National Oral Health Care Programme

The National Oral Health Care Programme is a pilot project on Oral Health started in the year 1999 by Dte.GHS and the Ministry of Health & Family Welfare. Under this project, All India Institute of Medical Sciences has been made a nodal agency. There have been modules & IEC materials developed under this program

Initial funding for the project was received from the Ministry of H & FW and later; the budget was merged with AIIMS budget during the 10<sup>th</sup> five-year plan. So far, approximately, 90 lakh rupees have been spent on this project. The programme was initially implemented in 12 states as a pilot project, namely, **Mahrashtra, Punjab, Delhi, Kerala & N E states (8 states).**

The project focussed on three components, namely

- I. Oral Health Education by involving health workers, school children, teachers and mass media
- II. Production of IEC Material for awareness generation and
- III. Formulation of modules for trainers (Dental Surgeons), Health Workers and Schoolteachers.

Thus the main focus of this project is on **primary prevention**, which is the most cost effective, appropriate and desirable.

The project was reviewed by National Institute for Health and Family Welfare in 2004 and approved with few recommendations which are as under:

- I. National Oral Health Care Program- Goals & Implementation Strategies: The prototype document gives an extensive conceptual framework for future development of Dental Health services in the country. This would be extremely useful to planners & program managers. The document highlights the high magnitude of dental & oral health problems along with the acute shortage of dental manpower & equipment in the country.
- II. The entire National Oral Health Care program be divided into several implementation phases, giving reasonable time frames & specific goals to be achieved at the end of each phase. Since dental health infrastructure, facilities, resources & dental problems may vary from state to state, state or region specific action strategies may be formulated. The resources available



with the states should be utilized & sustainability mechanisms be worked out. The centre can provide technical support & one time financial support

III. At the central level in the Directorate General of Health Services, following committees be formed:

- Central Steering Committee: To coordinate with the states under the chairmanship of Secretary Health. The members could be the State Health Secretaries & representative of officers from Ministry of Health & Family Welfare.
- Central Technical Committee: To provide technical support under the chairmanship of Director General Health Services from State Directorates, National Level dental experts etc.
- Central Monitoring & Evaluation Cell: This may be formed at any apex institute like AIIMS, New Delhi. This should have adequate staff for monitoring the program & giving feed back to the Central Technical Committee.

IV At the state level as per the available infrastructure & resources, suitable structures should be developed. The responsibility for the implementation should primarily rest with the state governments. The states may consider the followings to sustain the program:

- Issuing instructions to education departments to include appropriate oral health education material in the school curriculum & books
- The training of schoolteachers can be done under the school health program, using & modifying the prototype manual prepared in the pilot phase.
- The training of health workers on dental health issues can be linked with current training programs being implemented in the states. The basic training of health workers can include relevant contents on dental health as developed in the prototype manual for training of health workers under the present pilot project.
- Strengthening & development of dental health services could be a long term measure. The states can prioritise & strengthen infrastructure at PHC/CHC & district hospitals as per the availability of resources. The model is given in the prototype. The central government may provide some funds for the establishment of basic infrastructure & facilities in the states, either through its own funds or through external funding sources.

V Training manuals & IEC materials:

- c. All through these training documents contain technical details of important dental & oral health problems. Yet some modification may be required, while implementation by the concerned states as per the local situations.
- d. The IEC material may further be modified in consultation with expert agencies like Central Health Education Bureau, Indian Institute of Mass Communication, media division of MoHFW. The messages on oral & dental health should be merged with other IEC materials being developed by the centre & state governments.



## **Achievements of the project**

- Three million children of 6000 schools, across 72 cities and 16 states were covered for oral health education in collaboration with Indian Dental Association
- Training & Reorientation Programmes conducted for Dental Surgeons – 9
- Training Programmes conducted for Health Workers - 17
- Training Programmes conducted for School Teachers – 8

**2 b. Mechanism for developing and implementing Oral health prevention, detection and management programmes during the 11<sup>th</sup> Plan period through the primary, secondary, tertiary and super specialty levels on Govt., Voluntary and Private sector healthcare network.**

It is proposed that primordial, primary and secondary prevention, early detection and interceptive measures should be implemented as a centrally sponsored program. Towards this objectives, all the infra structure of PHC network, voluntary organizations, dental teaching institutions and public-private partnership should be strengthened.

### **Oral Health Education**

- a. Use of Primary Health Care Approach
- b. Effective use of IEC material
- c. Use of Mass Media
- d. Networking with other voluntary and health organisations

### **Formulation of Basic Package on Oral Health (BPOC) for the country and its implementation**

It is a preventive & interventional approach for basic oral health care consisting of 3 components – Oral Urgent Treatment (OUT), Affordable Fluoride Treatment (AFT) and Atraumatic Restorative Treatment (ART). Extensive training programme will have to be designed to train appropriate manpower to deliver the package to the people. It would meet the need of basic oral care of rural population.

### **Manpower & Infra-structure requirement for Primary & Secondary prevention of Oral Diseases**

a) **Administrative set-up** at the State and District levels need to be strengthened for planning, implementation, monitoring and evaluation of oral and dental health programs in the State. Definite norms need to be laid down for establishment of Dental care facilities at different levels in terms of manpower, space, equipments, instruments & consumables. Existing dental facilities at various levels need to be upgraded with the latest equipments and materials as per established norms.



**b) Mobile Dental Clinics** to provide on-the-spot diagnostic, preventive, interceptive and curative services to the people and school children in far-flung rural areas of the districts should be made available. Two dental surgeons sequence should look after restorative and curative work of the patients whereas one should devote time on the primary prevention of dental diseases through organizing lectures, participating in discussion using audio-visual aids to educate and motivate the rural masses to follow the primary preventive measures.

**c) Strengthening School Health Services** - Oral health activities in schools is very effective in reducing the prevalence of oral diseases. The population of school age group in the country constitutes approx. 34 % of the population. Children learn early and they have long remaining life. Good oral habits and healthy behaviors learnt early in life would help reduce the disease burden in later life. They also carry the health messages learnt in school to their homes and spread the knowledge to their parents, grandparents and siblings. At least one dental surgeon/ district should be appointed for School Dental Health program exclusively **to perform the following:**

- Oral health education
- Regular dental check ups
- Demonstration of correct brushing technique
- Supervised fluoride mouth rinsing
- Fluoride varnish application
- Fissure sealants
- ART
- Provide primary treatment measures where needed (restorations and extractions etc.)

**d) Continuing Dental Education Programme** - The CDE program must be compulsory for each dental surgeon serving in the state health services. Through these CDE programs the dental surgeon's knowledge will be updated regarding the most recent concepts of dental procedures as well as on various methods and approaches of preventive and curative aspects of the dental diseases. Directorate should evolve a system to objectively evaluate the knowledge and skills acquired such as credit points, to ensure active interest of dental surgeons in these CDE programmes. Such CDE programmes should also be organized for private practitioners.

**e) Guiding the Infection Control in Dental Practice** - With emerging infections and threat from blood borne transmissible diseases, it is very important for the country to have safe dental practice guidelines. We should have a structured study to find out the magnitude of challenge, barriers in non-practicing of correct infection control and waste disposal methods among dental professionals. Based on the findings of the study, country specific infection control guidelines for dental practices may be evolved through experimentation and economic implication analysis.



3) Taking into account increased longevity and life style changes, suggest appropriate preventive strategies as well as diagnosis and management of NCD in the elderly at Primary, Secondary and tertiary care settings.

### **Measures to Strengthen Oral Health Care for the Elderly**

It is expected that need for geriatric oral health care will increase many fold in coming years due to: 1) increase in the geriatric population and 2) higher percentage of elderly expected to be dentate. To provide quality care, some measures need to be planned as follows:

#### **Oral Health Care promotion**

- Oral health awareness and education programs should be conducted at the community level for the older persons.
- In an effort to empower the elderly in self-help and care, educational material in different local languages should be produced and freely distributed.
- As a preventive measure, younger adults should be targeted for imparting oral health education and healthy life styles, so that when they grow older, they retain maximum number of teeth in optimal health and prevalence of dental diseases is reduced.

#### **Oral Health Care Services**

- From an individual-based, treatment oriented approach; a community-based preventive approach should be adopted, while framing the oral health policy guidelines for the population, including the geriatric age group.
- Mobile dental clinics and dental camps in inaccessible areas should be organized frequently for elderly population to provide oral health care and education at their doorsteps. Dental associations, dental traders and multinational companies along with NGOs should be encouraged to support the out-reach programs for oral health care delivery to elderly persons.
- Institutionalized elderly, especially those who are frail and functionally dependant should receive preventive, prophylactic and curative dental services at the bedside by the trained and committed dental surgeons.
- Dentures for replacement of missing teeth should be considered essential like spectacles, hearing aids and equipments for mobility, and should be made available to elderly, at a highly subsidized rate or free.
- Elderly patients should be provided special facilities in Public hospitals such as separate queues, shorter waiting time and concessional rates for economically weaker elderly patients.

## **Integration of Geriatric Dentistry in Dental Education**

- Dental interns and house surgeons during their postings in rural areas should be specially guided to deliver oral health care to the elderly.
- Continuing education courses should be organized to orient young graduates and in-service dental surgeons towards the care of the elderly patients.
- International collaborative educational exchange programs should be initiated.
- Research in various aspects of aging and age related oral health problems should be undertaken.

### **4) To review ongoing schemes for emergency medical relief, accident and Trauma Services and suggest methods for managing these at primary, secondary and tertiary level**

At present, the emergency medical relief, accident and trauma services in our country do not include dental, oral and maxillofacial services. However, it is worth to mention here that out of all accident and trauma cases, 20% have some or other kind of oro-maxillofacial trauma requiring intervention. Moreover, oral and maxillofacial trauma needs to be managed by only Oral and Maxillofacial surgeon and not by any other specialist.

It is suggested that all emergency medical relief, accident and trauma services in our country should have Oral and Maxillofacial surgeon, with relevant infrastructure, equipments and materials.

### **5) To identify priority areas for basic, clinical, applied and operational research during the 11<sup>th</sup> plan period**

Following areas of research are being suggested (more topics of National relevance can be decided by discussions with experts) as priority for dental research in the country.

- New methods of prevention of dental caries and periodontal diseases
- Epidemiological research on oral health and socioeconomic factors
- Geriatric oral health, Nutrition and oral health
- Basic research on immunology of dental caries, periodontal diseases and oral cancer.
- Use of Atraumatic Restorative Treatment (ART) in Dental Caries Control at Community Level
- Oral Cancer epidemiology and impact of intervention..
- Etiopathogenesis and Management of Trigeminal Neuralgia.



**6) To suggest mechanisms for meeting the health care costs for management of NCD at National, State, Panchayati Raj Institutions and individual levels**

The treatment of Oro-dental diseases is enormously expensive and no Govt. across the globe can bear the cost for dental treatment for its entire population. It is suggested that Govt. should bear the cost for primary and secondary prevention completely and may impose cost to cost pricing for the treatment part at all levels. There can be special provision for the people below poverty line, elderly and children.

Apart from this, Govt. may introduce dental treatment in its Community Health Insurance Scheme as being planned for National Rural Health Mission to meet the health care cost at individual levels.

**7. To deliberate and give recommendations on any other matter relevant to the topic.**

- Oral Health Cells, one at the Center & 35 state levels should be established to monitor all Oral Health related activities.
- One School Dental Officer should be appointed exclusively for School health program in the District Health Cell in each of the selected district.
- Mass media like AIR and Doordarshan should allow free airtime to health educational programmes.
- Increase the para-dental manpower such as dental technicians, hygienists, and dental health nurse and utilize their services for oral health promotional activities.
- ASHA workers to be trained for oral health awareness, identification of oral diseases and appropriate referrals.
- Each dental teaching institution should adopt 1-5 villages in their districts, depending on the population size of the villages and provide health care services to the disadvantaged, including geriatric population.
- To ensure uniformity in admission, education and examination pattern across the country.

**Expected Achievements and Goals**

- Establishment of a National, (35) State & (85) District Oral Health Cells for proper monitoring, planning of dental public health, interventional measures & research activities
- Strengthening manpower & infrastructure at (255) PHC/ (85) CHC & (85) District hospitals & providing basic oral health care to the rural population
- To reduce the prevalence and incidence of oral diseases in the country
- To reduce the mortality and morbidity of oral diseases
- Early detection of oral cancers – from stage 3 & 4 to stage 1 & 2

The summary table for expected outcome is given in the following table.

Oral Diseases	Age Group	Prevalence 2005*	Expected Status by 2012
Dental Caries	All	40 - 50%	<30%
Periodontal Diseases (relatively Severe)	15+	45%	<35%
Malocclusion	9-14	32.5%	25%
Oral Cancer	35+	0.03%	0.02%
Fluorosis	All	5.5%	4%



# NATIONAL PROGRAMME FOR PREVENTION & CONTROL OF FLUOROSIS

## Executive Summary

Fluorosis is a public health problem. It is caused by excess intake of fluoride through drinking water, food products, industrial pollutants, etc., over a long period. The permissible limit of fluoride, as per BIS, is 1 ppm in drinking water. Fluorosis is prevalent in 19 States/UTs covering 196 districts of the country. The number of affected population in the country is about 66 million.

The major health problems like dental fluorosis, skeletal fluorosis are permanent and irreversible in nature. But, can be easily prevented, if diagnosed properly.

At present, there is no National Programme for prevention & control of Fluorosis. The chairman of National Human Rights Commission has reviewed the fluorosis situation in the country and suggested for a National programme. Ministry of Health & F.W. has given assurance in the Parliament about the same.

Goal of the proposed national programme is to prevent and control fluorosis in the country with the objectives to assess the fluoride content in all sources of drinking water consumption of food rich in fluoride and intake of industrial pollutants at district level and to coordinate the activities in relation to fluorosis being carried out in various Departments/Ministries of Rural Development, Rajiv Gandhi National Drinking Water Mission, Education, Social Justice and Empowerment, NICD, Ministry of Health & F.W. to develop extensive IEC material for all level.

The strategies to be adopted are survey of fluoride level in drinking water, food products, and industrial emission, launching of extensive fluorosis Prevention & Control Programme in coordination with Deptt. of Drinking Water, Ministry of Environment, Information & Broadcasting, Social Justice & Empowerment, Health & F.W. training of district medical & paramedical personnel. The proposed activities are to be taken from the village level to PHC, CHC, BDC, DDC, State & centre

Establishment of fluoride testing laboratories for water, food and blood in each district of the programme area.

In the beginning, the programme is to be implemented in five districts of five zones of the country during the 1<sup>st</sup> two years and then the same would expand in 100 districts of 19 endemic States. For this Programme about Rs.68 crores has been suggested for the 11<sup>th</sup> Plan.

The expected outcomes are identification of various sources of fluoride intake at the village level in the district, development of trained manpower for diagnosis and prevention of fluorosis and extensive awareness programme would be created at the village level and to save the people from harmful effects of irreversible nature of fluorosis.

## **Introduction**

Fluorosis, a public health problem, is caused by excess intake of fluorides through drinking water/ food products/industrial pollutants, over a long period. It results in major health disorders like dental fluorosis, skeletal fluorosis and non-skeletal fluorosis besides inducing ageing. These harmful effects, being permanent in nature and irreversible, are detrimental to the health of an individual and the community, which in turn has an impact on growth, development, economy and manpower of the country.

## **Sources of Fluoride**

The main sources of fluoride intake are drinking water, food, drugs, & industrial emissions. Permissible limit for fluorine, as per BIS, is 1 ppm in drinking water.

## **Prevalence**

Fluoride endemicity has been reported in 196 districts of 19 states & UT's of the country. The affected population with fluorosis is about 66 million in the country. Based on excess level of fluoride content in No of districts, the States/UTs have been classified as mild, moderate and severe endemic States/UTs of Fluorosis. It affects all ages. States like Andhra Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Uttar Pradesh, Tamil Nadu, West Bengal are affected from fluorosis. In all these States, the drinking water has high fluorine content.

As there is no effective treatment for the fluoride related disorders, prevention is the most effective measure for the same. Fluorosis is a preventable disease. Thus measures to prevent intake of excess of fluoride in the early stages would be very beneficial in controlling this disease.

## **Why a National Programme?**

At present there is no National Level Programme for Fluorosis Control. Data regarding prevalence of Fluorosis is based on studies conducted by different groups over a period of time. Surveys at a National level regarding prevalence have not been conducted so far. For provision of safe drinking water, Government of India supplements the efforts of State Government and UT's by providing funds under the Accelerated Rural Water Supply Programme (ARWSP). Inadequate information is available with practicing doctors regarding fluorosis. Few Government institutions like AIIMS, NICD, NIN, AIH&PH in the country have the infrastructure for fluorosis diagnosis.

The chairman of National Human Rights Commission reviewed the fluorosis situation in the country and recommended a national Programme for the same.



There was reference from PMO Office about fluorosis problem in the country. Further, the Ministry of Health & F.W. has given assurance to look into the modalities of the National Programme on Fluorosis.

Thus there is an urgent need to address these issues. A coordinated effort on part of different ministries is required to tackle this problem. National Programme for Prevention and Control of Fluorosis is envisaged during the 11<sup>th</sup> five year Plan.

### **Goal**

To prevent and control Fluorosis in the country.

### **Objectives**

**The Objectives of the National Programme for Prevention & Control of Fluorosis are as follows :**

1. To assess the intake of fluoride by assessing its presence in all sources of drinking water, consumption of foods rich in fluoride and intake through industrial emissions at the districts in the endemic States.
2. To coordinate the activities in relation to fluorosis being carried out in various Departments/Ministries like M/o Rural Development, D/o Drinking Water, RGNDWM, Education, Social Welfare, NICD, M/o H&FW.
3. To impart training to medical doctors and paramedicals of the districts for early diagnosis of Fluorosis.
4. To develop IEC material from Policy Level to the community personnel.

### **Project area**

In the beginning the programme for prevention and control of Fluorosis can be implemented in 5 districts selected from each of the following zones of the country based on prevalence of fluorosis, geographical distribution, weather, etc., on a pilot basis.

- a) Southern zone (one district)
- b) Western zone (one district)
- c) Northern zone (one district)
- d) Eastern zone (one district)
- e) Central zone (one district)

The Pilot Programme will be implemented in 1<sup>st</sup> two year's time including impact evaluation of various strategies/components of the Programme. During 3<sup>rd</sup> year onwards, the Programme will be expanded to cover about 100 districts of 19 States depending on availability of funds.

## Strategies

The following strategies are to be adopted:-

- Conducting fluoride survey regarding fluoride level in all drinking water sources, food product sources, industrial emissions if there is industry in the project district.
- Launching of extensive Fluorosis prevention and control programme in coordination with Dept of drinking water, Ministry of Environment, ministry of information and Broadcasting, Ministry of social Justice and Empowerment and Ministry of health & Family Welfare
- Establishment of testing of fluoride facility in water, food and blood in each district of programme area.
- Imparting training programme to medical and paramedicals of the programme districts to diagnose Fluorosis cases including deformity cases.
- To develop extensive IEC materials in relation to Fluorosis
- To implement the decision of Central Programme Implementation Committee under DGHS.

## Implementation Committee

As fluorosis is a multifaceted problem it is important to constitute a technical committee under the chairmanship of DGHS by associating all concerned Departments. This is already approved by HFM with DGHS as chairperson and Adviser (Nutrition) as Member Secretary of the Committee.

## Activities to be undertaken

1. Survey of fluoride content of all water sources/food products etc.
2. Provision of safe drinking water. (To be provided by State Govt./Deptt. of Drinking Water Supply, M/o Rural Development, Govt. of India, Panchayati Raj System, BDC & DDC)
3. Estimation of fluoride content in water/ food /blood.
4. Training of medical and paramedical staff.
5. Development and preparation of IEC material for behavioural changes.
6. Reconstructive surgeries for detected deformity cases.

## Proposed activities at various levels

**Village Level** - The existing AWW/ASHA/village a health guide/panchayat functionary will be involved in the implementation of the programme. The appropriate training for fluorosis prevention and control will be imparted to the functionaries.

**Sub-centre Level** - Both male and female multipurpose workers/ mukhyasevikas of ICDS will be trained in the programme.



**Primary health Center** - The existing medical officer, male and female health assistants of PHC and ICDS supervisory staff will supervise the sub-centre and village level functionaries.

**Community Health Centre** - The existing medical and paramedical staff of the CHC, staff members of Block Development Committee (BDC) and ICDS officer will be trained in proper supervision and implementation of the fluorosis prevention and control programme. This will work as the first referral hospital/center for the patient.

**District Level** - The District health Officer, staff of district Development committee (DDC), Zila parishad, other associated staff of ICDS, education etc. will be trained about various components of the programme. The CMO of the district will be responsible for the Programme.

**State level** - The DHS of the State/UT where programme will be implemented at the district level will be the implementing authority of the fluorosis prevention and control programme and they will be sensitized accordingly.

**Central Level** - The Dte.G.H.S of Ministry of health & Family Welfare will be the nodal authority for advising, monitoring, technical and financial guidance at the national level. The Nutrition & IDD Cell of Dte. G.H.S can act as Fluorosis Prevention and Control Cell of the country.

### **Expected Outcome**

The expected outcome of the proposed National Programme for Prevention & Control of Fluorosis are as follows:-

1. Various sources of fluoride intake viz. water, food products, drugs, industrial pollutants, etc. would be identified at the village level of the district.
2. Trained manpower for diagnosis and treatment of fluorosis will be developed in the endemic districts of the country.
3. An extensive awareness will be created among the people to bring the changes in behaviour.
4. Community will be assured for safe drinking water.
5. Persons suffering from fluorosis will be treated as per their need including reconstitutive surgery and rehabilitation of the individual in the existing district hospitals.
6. Save the people from harmful effects of irreversible fluorosis.

## Budget

### 1<sup>st</sup> Year

#### 1. Central Coordination Cell

##### Recurring expenditure

1.	Consultant Rs. 25,000/- pm	Rs 3.00 lakh p.a.
2	Computer operator Rs. 6,500/- pm	Rs.0.78 lakh p.a.
3	Travel	Rs.1.00 lakh p.a.
4	Stationary etc	Rs.1.00 lakh p.a.
	<b>Total</b>	<b>Rs.5.78 lakh p.a.</b>

#### 2. Estimation of fluoride

##### Recurring expenditure

1	Reagents	Rs.2.0 lakh p.a.
2	Honorarium to lab tech	Rs.1.0 lakh p.a.
	<b>Total</b>	<b>Rs.3.0 lakh p.a.</b>

##### Non-recurring expenditure

1	Lab equipment	Rs.10 lakh
2	Capacity Building of National/Regional Institute for fluorosis (one time grant in aid for NICD, AIIMS, NIN, AIIPH&PH @ Rs25 lakhs each year)	Rs.100 lakh

#### 3. Surveys to assess prevalence of fluorosis

1	Consultant Rs. 25,000/- pm	Rs 3.0 lakh p.a.
2	Field staff 5 , @ rs. 6,000/- pm	Rs 3.6 lakh p.a.

#### 4. Training of personnel at district level Rs 4.0 lakh per district

#### 5. Coordinating meetings

	Two meetings every year @ Rs 1.0 lakh for each district	Rs.2 0 lakh p.a.
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#### 6. IEC Activities for BCC Rs. 5 lakh per annum

Total fund required for one district = Rs. 30.6 lakh



Total fund required for five district = Rs.153.0 lakh

Fund required for infrastructure development at National/Regional = Rs.100 lakh  
Institute for Fluorosis

Total fund required for 1<sup>st</sup> year = Rs.5.78+ 100.00+153.00=Rs. 258.78 lakh

## 2<sup>nd</sup> Year

Central Coordination Cell = Rs.5.78 lakh

Recurring expenditure for one district = 20.6 lakh

For 5 districts =  $20.6 \times 5 = 103.0$  lakh

Fund required for operation research & impact evaluation = 10 lakh

Cost of conservative & surgical management @10 lakh per district = 50 lakh

Total fund required =168.78 lakh

## 3<sup>rd</sup> Year

Central Coordination Cell = Rs.5.78 lakh

The programme is to be expanded in 35 additional districts.

- (i) Cost for additional 35 districts =  $30.6 \times 35 = 1071.0$  lakh
- (ii) Running cost for five district =  $20.6 \times 5 = 103.0$  lakh
- (iii) Cost of conservative & surgical management of 20 districts =200 lakh

Total = 1379.78 lakh

## 4<sup>th</sup> Year

Central Coordination Cell = Rs.5.78 lakh

The programme is to be expanded in 35 more additional districts.

- (i) Cost for addition 35 more additional districts =  $30.6 \times 35 = 1071.0$  lakh
- (ii) Running cost for earlier 40 district =  $20.6 \times 40 = 824.00$  lakh
- (iii) Cost of conservative & surgical management of 50 districts =500 lakh

Total = 2400.78 lakh

## 5<sup>th</sup> Year

Central Coordination Cell = Rs.5.78 lakh

## NATIONAL PROGRAMME OF HEALTH CARE FOR THE ELDERLY

The number of persons above the age of 60 years is fast growing, especially in the developing world, including India. It is estimated that there are currently more than 600 million people aged sixty and above all over the world. An even more marked increase is expected in the number of the oldest-old, (persons aged 80 years and over) whose number is expected to rise from 86 million in 2005 to 394 million in 2050. (World Population prospects - The 2004 revision). Falling fertility rates worldwide and increased life expectancies have contributed to the increasing share of the elderly in the world's population. 3 out of 5 old people live in developing countries, and by 2050, 4 out of 5 will do so.

India, as the second most populous country has 76.6 million people at or over the age of sixty (2001 Census) constituting about 7.7% of its total population. Life expectancy has increased from around 59 years in the 1970s to 63 years currently, and is expected to cross 70 years by the year 2020. The proportion of elderly in India is set to rise dramatically in the next few decades. The problems faced by this segment of the population are numerous, owing to the ongoing social and cultural changes, and the inherent vulnerability of the elderly to diseases.

The Health of the elderly requires comprehensive care with preventive, curative & rehabilitative services. Unlike the developed countries, India does not have a well-structured Geriatric Health service, thus leading to a relatively *ad hoc* system of health care delivery for the elderly. In this scenario, there is a need for a specialized geriatric health service, which recognizes the elderly as being a vulnerable population. The service must educate, to develop and maintain lifestyles, which are healthy. It must provide a counseling and medical care facility to look after the needs of the sick elderly, and an emergency facility to reach those in acute need and transport them to a hospital. This should include acute care, long term care & community based rehabilitation.

This proposal outlines such a service, by developing two National Institutes of Ageing one in the North, and one in the South, with the goal of providing comprehensive Geriatric Medical Care to the needy elderly, to train providers in delivering quality Geriatric Care at their respective institutions and to promote high quality research in Geriatrics and Gerontology. The programme aims in the long run, to provide quality services closest to their homes of the elderly; to keep them functional and make them return to the community as early as possible after illness. Hence easy of access, continuity and good quality of care are essential components of Geriatric Health Care.

The National Policy on Older persons (1999) has emphasized the major issues relevant to the elderly population and the need to provide specialized Geriatric services at various levels of health care. The programme is expected to result in a healthy elderly community with better physical & mental health and independence.



## Objectives

1. Provide comprehensive health care to the elderly by preventive, curative and rehabilitative services.
2. Train Health Professionals in Geriatrics, including supportive care and Rehabilitation.
3. Develop scientific solutions to specific elderly health problems by research into Geriatrics and Gerontology.

## Vision

A society where persons aged 60 years and above will have the peace of mind and sense of security that arises from the knowledge that they have access to quality health care at all times

## Mission

A community based holistic care system, which offers every citizen above the age of 60 years the opportunity to participate in a health care programme, which includes preventive, curative and emergency health care services of high quality.

## Goal

To improve the access to promotive, preventive, curative and emergency health care among elderly persons.

## Strategies

The services under the programme are envisaged at three levels :

**Level One** A Home Health service, which will comprise of a visiting component intended as an early warning system to detect health problems, and as a source of psychological support.

**Level Two** A community based health centre for the elderly providing a base for educational and preventive activity and an out patient medical service. This would be the base for the home health service, and for the program in general.

**Level Three** An improved hospital-based support service with focussed health care needs, at the institute.

## Capacity Building at the NIA

Health professionals and health institutions must be oriented to the needs of the elderly in order to enable them to provide health services effectively. The function of the NIA encompass Health Care delivery, Training of Health Professionals, and Research activities

**Geriatric Health Care Delivery** includes comprehensive health care including specialty services like Eye, ENT, Orthopaedics, Urological and Psychogeriatric services. It comprises of Outpatient clinic, 30-bed Acute Care Unit to handle acutely ill patient, 30-bed Subacute Care Unit for management of sick elderly and rehabilitation, and 40-bed Long Term Care Unit for management of elderly with chronic medical illness

**Training of Health Professionals** will enable them to appropriately detect and manage health conditions specific to the aged, and to equip them with the skills to inform, educate and counsel the elderly. Standard training materials will be prepared for this purpose.

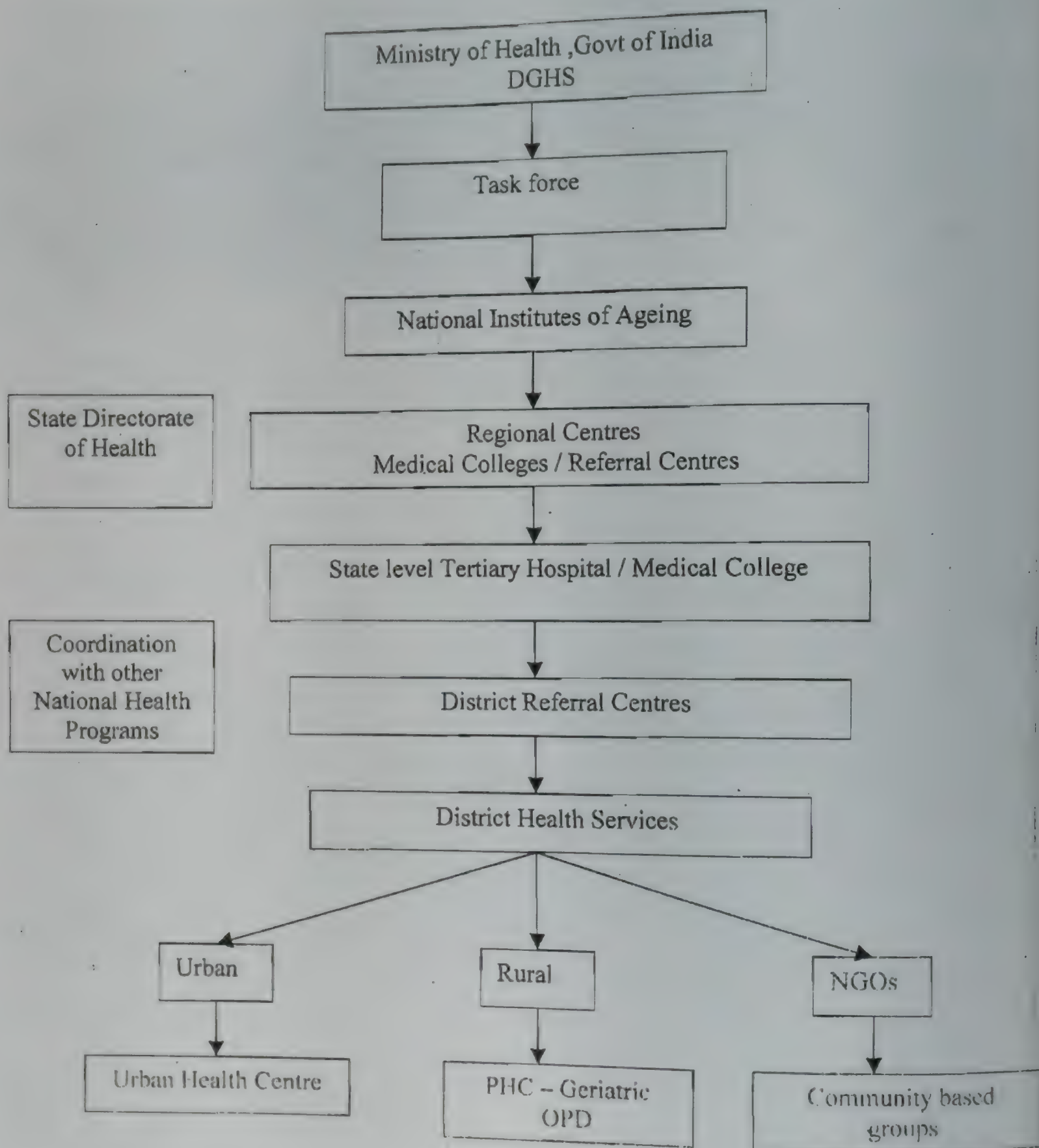
**Research Activities** The institute will aim to develop a research database and scientific solutions to various health problems of the elderly. Also research work will be carried out on Ageing and Age associated diseases.

**Programme Implementation** The national program for health care of the elderly will be a centrally funded program. The entire Geriatric population will be covered by the 2 national institutes of Ageing, one in North India and the other in South India, eight identified regional centres (each implementing Geriatric Health Care in about 3 to 4 states.) under the control of these two institutes, one teaching medical College / Tertiary level hospital in each state to develop the Geriatric Unit which will include the Outpatient services, Acute care, subacute Care and Long Term Care units. The health professionals trained here will be sent to the district level centres for Geriatric Health Care delivery.



## Organisational Structure

### Proposed Organisation Chart



## Activities of NIA

### Phase I: 3 years

1. Identification of space to build NIAs, Construction plan and exploring options for outsourcing and approval.
2. Two nodal Institutes i.e PGIMER Chandigarh and Madras Medical College, Chennai may be identified for training of manpower in Geriatrics
3. ICMR as Nodal Agency to carry out research in the field of Geriatrics

### Phase II: 2 years

1. Development of full fledged Health Care Delivery Unit at NIA (100 beds) which includes inter disciplinary specialty care (ENT, Ophthalmology, Orthopaedics, Urology & Psychogeriatrics), training of health professionals and research division.
2. Capacity building at regional centres, state level tertiary care centre and district level hospitals in terms of infrastructure development including Geriatric Unit

### Budget

Budgetary Head	1 <sup>st</sup> Year (INR in crores)	2 <sup>nd</sup> Year (INR in crores)	3rd Year (INR in crores)	4 <sup>th</sup> Year (INR in crores)	5 <sup>th</sup> Year (INR in crores)	Total (INR in crores)
Establishing NIA (2)						
Building & Infrastructure	6.0	6.0	-	-	-	12.0
Medical Equipment	-	3.2	3.2	-	-	6.40
Salary, maintenance & consumables*	-	-	7.2	7.2	7.2	21.60
Training of Health Professionals	2.0	2.0	2.0	2.0	2.0	10.0
Establishing (4) Regional Centers	15.0	5.0	5.0	5.0	5.0	35.0
Strengthening PHC's	-	2.5	2.5	2.5	2.5	10.0
<b>Total</b>	<b>23.0</b>	<b>18.7</b>	<b>19.9</b>	<b>16.7</b>	<b>16.7</b>	<b>95.0</b>

#### \* Details of Recurring costs/NIA/Year

Budgetary Heads	Cost per year (INR)
Salary	
1. Medical Officer	80,20,000
2. Staff Nurses	84,00,000
3. Physiotherapist	22,00,000
4. Social worker	9,60,000
5. Hospital worker	44,40,000



6. Driver	2,40,000
7. Clerical staff	2,40,000
	2,45,00,000
Maintenance	10,00,000
Drugs & consumables	1,00,00,000
Telephone & electricity	5,00,000
<b>Total</b>	<b>3,60,00,000</b>

# **NATIONAL PROGRAMME FOR PREVENTION AND CONTROL OF DEAFNESS**

## **Executive Summary**

Hearing loss is the most common sensory deficit in humans today. World over, it is the second leading cause for 'Years lived with Disability (YLD)' the first being depression. As per WHO estimates in India, there are approximately 63 million people who are suffering from Significant Auditory Impairment, this places the estimated prevalence at 6.3% in Indian population. As per NSSO survey, currently there are 291 persons per one lakh population who are suffering from severe to profound hearing loss (NSSO, 2001). An even larger percentage of our population suffers from milder degrees of hearing loss and unilateral (one sided) hearing loss. Over 50% of the causes of hearing impairment are preventable and a large percentage of causes are treatable by surgical methods while other patients can be rehabilitated with the use of hearing aids, speech and hearing therapy. It is feasible to focus attention to primary and secondary prevention of hearing impairment and deafness through the existing health infrastructure with some modifications.

## **Programme Execution & Expansion**

A pilot project, to be conducted in 25 districts derived from **10 states** and 1 union territory, is already in the first phase of implementation. This will run from 2006 to 2008. In the remaining four years of the 11<sup>th</sup> Five year plan, it is proposed to expand this programme to include a total of 203 districts covering all the states and Union territories of India by 2012. The expansion will be done in a phased manner, with inclusion 45 new districts each year. At the end of the plan, it is proposed to cover 50% of the districts in all the pilot states (except Uttar Pradesh) and 25% of the districts in all the other states/UTs.

## **Programme Implementation**

The **existing health care infrastructure from district to grassroot level** along with non governmental organizations, Panchayati raj institutions, village health committees and parents would be utilized for the project.

The **programme delivery would be from district below and strengthening of services and development of effective linkages** would be done from district to grassroot level. The government and private doctors as well as audiologists will be involved.

The **State Medical College** in the respective states from where districts have been identified would be the **Centre of Excellence** that will support the programme in the state with provision of expertise for training as well as patient care and referral.

The **District hospital** is to be the main focus of activity for the proposed programme. It would be strengthened through trainings of ENT doctors and audiologists alongwith with the provision of equipment to enable diagnostic, therapeutic (medical & surgical) and rehabilitation activities.

The doctors at **Primary Health Centres (PHCs) & Community Health Centres (CHCs)** level will also be given training as well as the basic diagnostic equipment, to enable them



to diagnose, treat and refer the patients requiring further treatment with ear diseases and hearing problems.

The **Multipurpose workers male and female** at the subcentre level and the **grassroot level functionaries (AWWs, ASHA,)** including Panchayati Raj Institutions, community based organizations such as Mahila Mandals will be sensitized about the programme which would facilitate in creating awareness and mobilizing the communities.

A special emphasis would be given to educating parents especially mothers. The **School Health system** will play a very important role in the programme as approximately 20% of the population is in the age group 5 to 14 years and as per the estimates (WHO) substantial proportion of children suffer from chronic suppurative Otitis media, serous otitis media and ear wax. The school teachers of the Primary section would conduct a survey with the help of questionnaire for the Primary children. Those found to be positive, will undergo an ear check up by the school health doctor/ Primary Health Centre (PHC) or a Community Health Centre (CHC) doctor who would have received training in this aspect. The doctors will be able to identify, treat and if required refer the children with ear morbidities and hearing problems.

The programme would be focusing on the following areas:

- 1) **Training** of district ENT officers, audiologists, Medical officers at Primary Health Centre (PHC)/Community Health Centre (CHC) and School level, Multipurpose Workers (MPWs) at subcentre level, and the grassroot level functionaries Anganwadi workers (AWWs), Accredited Social Health Activist (ASHA), school teachers and parents.
- 2) **Capacity Building** : to provide suitable diagnostic and surgical equipment to the PHCs, CHCs, School Health doctors and District hospitals.
- 3) **Screening, early diagnosis and management**: Will be carried out through all trained health care providers. It will include School level screening as well as conduct of monthly screening camps.
- 4) **Provision of surgical and rehabilitative services as well as hearing aid provision**. These activities will primarily be carried out at the level of the district hospital with the State Medical College serving as the Centre for Excellence.
- 5) **IEC activities** would be an important and essential part of the programme from grassroot level to district level. All attempts would be made to create awareness amongst general population in order to combat stigma, discrimination and facilitate early diagnosis and treatment.



## Introduction & Justification

Hearing loss is the most common sensory deficit in humans today. World over, it is the second leading cause for 'Years lived with Disability (YLD)' the first being depression. It is responsible for 24.9 million YLD globally and gives it a larger non-fatal burden than alcohol use disorders, osteoarthritis and schizophrenia. As per WHO estimates in India, there are approximately 63 million people, who are suffering from Significant Auditory Impairment, this places the estimated prevalence at 6.3% in Indian population. As per NSSO survey, currently there are 291 persons per one lakh population who are suffering from severe to profound hearing loss (NSSO, 2001). With such a large number of hearing impaired young Indians, it amounts to a severe loss of productivity, both physical and economic. An even larger percentage of our population suffers from milder degrees of hearing loss and unilateral (one sided) hearing loss. Over 50% of the causes of Hearing Impairment are preventable including Hearing loss caused by Infections of the ear (ASOM, CSOM), Secretory Otitis Media, Traumatic, Rubella deafness, Noise Induced Hearing loss and Ototoxicity. 30% of deafness, though not preventable is treatable. In our country, overall ear care in terms of primary, secondary prevention and rehabilitation have not been paid due attention. It is feasible to focus attention on primary, secondary prevention and rehabilitation of hearing impairment and deafness through the existing health infrastructure with some inputs. Main emphasis should be on health education with special attention to hearing impairment and its prevention, proper attention to pre and postnatal causes in early age and care of upper respiratory infections. Thus a total of 80% of all deafness is avoidable by medical or surgical methods while other patients can be rehabilitated with the use of hearing aid, speech and hearing therapy. This strongly indicates the need to strengthen ear & hearing care services. Against the above background, a Pilot phase of the National Programme has been initiated from July 2006 to June 2008. It is proposed to incorporate the programme in the eleventh five year plan with modifications as per the lessons that will be learnt during the pilot phase.

### Objectives of the Programme

1. To **prevent** the avoidable hearing loss on account of disease or injury.
2. Early identification, diagnosis and treatment of ear problems responsible for hearing loss and deafness.
3. To **medically rehabilitate** persons of all age groups, suffering with deafness.
4. To **strengthen the existing inter-sectoral linkages** for continuity of the rehabilitation programme, for persons with deafness.
5. To **develop institutional capacity** for ear care services by providing support for equipment and material and training personnel.



**Long term objective:** To prevent and control major causes of hearing impairment and deafness, so as to reduce the total disease burden by 25%, by the end of Eleventh Five Year Plan.

### Strategies

1. To strengthen the service delivery including rehabilitation.
2. To develop human resource for ear care.
3. To promote outreach activities and public awareness through innovative and effective IEC strategies with special emphasis on prevention of deafness.
4. To develop institutional capacity.

### Implementation Plan in the 11<sup>th</sup> Five Year Plan

After the pilot phase, during 2006-2008, based on the outcome and experience gathered, the same will be up-scaled during the last four years of the 11<sup>th</sup> Five Year Plan to another 178 districts.

The pilot project is being conducted in **25 districts** derived from **10 states** and **1 union territory**. During this phase, the criteria of selection of the states and districts is based on

1. Geographical criteria
2. Availability of ENT surgeons and Audiologists/Audiometric assistance at the District Hospitals.

S.No.	State/U.T.	Medical College	Districts
1.	Andhra Pradesh	Osmania Medical College/Govt. hospital	•Mehboob nagar •Nalgonda •Khammam/Nellore
2.	Assam	Guwahati Medical College	•Kamrup •Sonitpur •Nalber
3.	Gujarat	Govt. Medical College, Jamnagar	• Jamnagar, •Rajkot •Bhavnagar
4.	Karnataka	AIISH, Mysore	•Mandya •Hubli •Hassan
5.	Manipur	RIMS, Imphal	•Thoval •Imphal
6.	Sikkim	Govt. Medical College, Gangtok	•Gangtok
7.	Tamil Nadu	Madras Medical College	•Vellupuram •Nammakal •Madurai
8.	Uttanchal	Jolly Grant Medical College	•Haridwar

			•Dehradun *Tehri
9.	Uttar Pradesh	KGMC Lucknow	•Sultanpur •Barabanki *Gorakhpur
10.	Delhi	Lady Hardinge Medical College	*North:- Maharishi Valmiki hospital •West: DDU hospital
11.	Chandigarh	Post Graduate Institute of Medical Sciences Chandigarh	

### Expansion Plan in the 11<sup>th</sup> Five year plan

During the 2<sup>nd</sup> to 5<sup>th</sup> year of the 11<sup>th</sup> plan, the programme will be expanded to include the remaining 19 states and 5 union territories. From the pilot states, 50% of the remaining districts (86) would be covered by 2012, with the exception of Uttar Pradesh, where 16 new districts are proposed to be selected. For the remaining 19 states & 5 Union Territories, it is proposed to include 25% of the districts (92) in the programme by 2012.

### Selection Criteria for the districts

As per the vision of the National Rural Health Mission, the priority would be given to states with weak public health indicators. Adequate regional representation of the states will be ensured. In the first 3 years, 5 states and 1 union territory will be included into the programme every year. In the last year of the plan, 4 states and 2 union territories will be included. The recruitment of the states will be in the following order:

Year 2008-2009:

Jharkhand  
Orissa  
Himachal Pradesh  
Rajasthan  
Meghalaya  
Daman & Diu (UT)

Year 2009-2010:

Arunachal Pradesh  
Bihar  
Jammu & Kashmir  
Maharashtra  
Nagaland  
Lakshadweep (UT)

Year 2010-2011

Mizoram



Chhatisgarh  
Tripura  
Kerala  
Madhya Pradesh  
Pondicherry(UT)

Year 2011-2012

Goa  
Punjab  
West Bengal  
Haryana  
Dadar & Nagar Haveli (UT)  
Andaman & Nicobar Islands (UT)

During the 11<sup>th</sup> plan, additional medical colleges will be identified within the states to serve as Centres of Excellence for the districts undertaken in the programme.

### **Organisational Structure of National Programme for Prevention and Control of Deafness**

#### **Central:**

**Central Coordination Committee (CCC)** – will be constituted at the central level.  
This will consist of the following members :

- |   |   |
|---|---|
| • Representatives of Directorate General of Health Services/Ministry of Health & Family Welfare | 2 |
| • Representative of WHO   | 1 |
| • ENT specialists/experts   | 2 |
| • Audiologists and Speech therapists  | 2 |
| • Public Health expert  | 1 |
| • Representative of RCI   | 1 |

#### **Role of Central Coordination Committee (CCC):**

It will act as a Coordinating body, in order to oversee, evaluate and monitor the implementation plan for Programme for Prevention and Control of Deafness. It will form subcommittees to achieve it's objectives.

#### **Central Cell for providing support to Central Coordination Committee:**

A central cell will be set up at the central level in the Directorate General of Health Services/Ministry of Health & Family Welfare, to provide necessary leadership, technical support to the States/District level functionaries in successfully implementing and running the programme.

## **State:**

### **State Health Society and Programme Committee (under NRHM)**

Already constituted state mission under NRHM will look into the activities at state level. Under the programme, funds will be transferred to State Health Society, for carrying out various activities through District Health Society.

#### **Functions**

- Preparation of District plans for implementation of National Programme for prevention and control of Deafness.
- Monitor and supervise Implementation of National Programme for Prevention and Control of Deafness in the state in reference to the programme activities related to Training of Medical and non-medical professionals, IEC and Social mobilization and Manpower development.
- Release and monitor flow of funds to District Health Societies.
- Review and take appropriate measures in the expenditure of funds by District Health Society.

### **State Technical Committee:**

Two ENT experts and 1 Audiologist will be members of the State Technical Committee. This committee will provide technical guidance and expertise to the State Health Society for the purpose of implementation of the programme in the various districts of the state.

## **III District**

### **District Health Society and Programme Committee (under NRHM)**

#### **Functions**

- ◆ **Planning:** Preparation of District Micro-plan based on magnitude and distribution of deaf/hearing impaired persons and resources available for ear care.
- ◆ **Implementation of the programme** through utilization of government facilities, involvement of NGOs and community participation.
- ◆ **Monitoring of programme :** activities and quality control.
- ◆ **Financial and Material Management ;**
- ◆ **Social mobilization and public awareness**
- ◆ **Orientation of various functionaries of health and other related sectors.**
- ◆ **Procurement of equipments and other materials.**
- ◆ **Arrangements for screening camps-** through identified NGOs, having adequate infrastructure for carrying out activities under the programme.
- ◆ **Monitoring and Financial Assistance to NGOs for organizing camps.**



## District Hospital

The ENT Surgeon and the Audiologist at the District hospital will be the key persons for implementation of the programme. However, it is proposed to employ additional staff for the purpose of running the programme:

1. **Programme Assistant:** A technical person with 1 year diploma in Audiology /AudiometricAssistant,  
Function:

- Assist in providing audiological services
- Assist in conduct of screening camps
- Assist in training programmes
- Monitoring and Evaluation of the Programme
- Maintenance of Database

Proposed Salary: Rs. 10,000 per month

2. **Teacher for the Young Hearing Impaired:** It is proposed that a teacher may be inducted on contractual basis, to look after the therapy and training of the young hearing impaired children at the district level

Functions: Training, therapy and early education for the young hearing impaired children.

Proposed Contractual amount: Rs. 5000 per month

## Service Delivery and Referral System

### I Primary level

CHCs/PHCs/SCs/Primary School teachers/Health Workers/Panchayat  
Functions

- ◆ Early identification of cases of hearing impairment and their management.
- ◆ Primary ear care.
- ◆ Promoting public awareness in respect of prevention of deafness.
- ◆ Sensitization training of health workers.
- ◆ Support to School Ear care programme.

### II Secondary level

District Hospital

Functions

- ◆ Management of cases referred from PHCs/CHCs.
- ◆ Organization of Ear care screening camps.
- ◆ Organization of School Ear Care Programme.

- ♦ Training of manpower- PHC doctors, nurses, Audiometric assistants, health workers, school teachers.

### III Tertiary level

#### State Medical College

In each state, one medical college has been identified to act as the Center of Excellence and referral center for the districts covered under the programme in that state. Two ENT surgeons and one Audiologist will be trained under the programme for skill up-gradation in ENT/Audiology procedures.

#### Functions

- ♦ Training of Manpower i.e. sensitization programmes and surgical training workshops
- ♦ Management of referral cases, especially the difficult cases for diagnosis and management.

#### Programme components

- 1) Manpower training & development
- 2) Capacity building
- 3) Service provision including rehabilitation
- 4) awareness generation through iec activities

#### Manpower Training & Development

##### Objectives:

1. To orient all the Health Care personnel from the district to grassroot level about prevention, promotion, early identification and rehabilitation of all types of ear diseases leading to deafness.
2. To make these personnel aware of the existing facilities available for deafness in order to facilitate appropriate referral.
3. To sensitize the health care personnel regarding their specific roles in the programme.
4. To enable the health providers to provide a leadership role in creating awareness about hearing impairment.
5. To facilitate development of suitable manpower, in order to be able to implement this programme in the entire nation, in a phased manner.

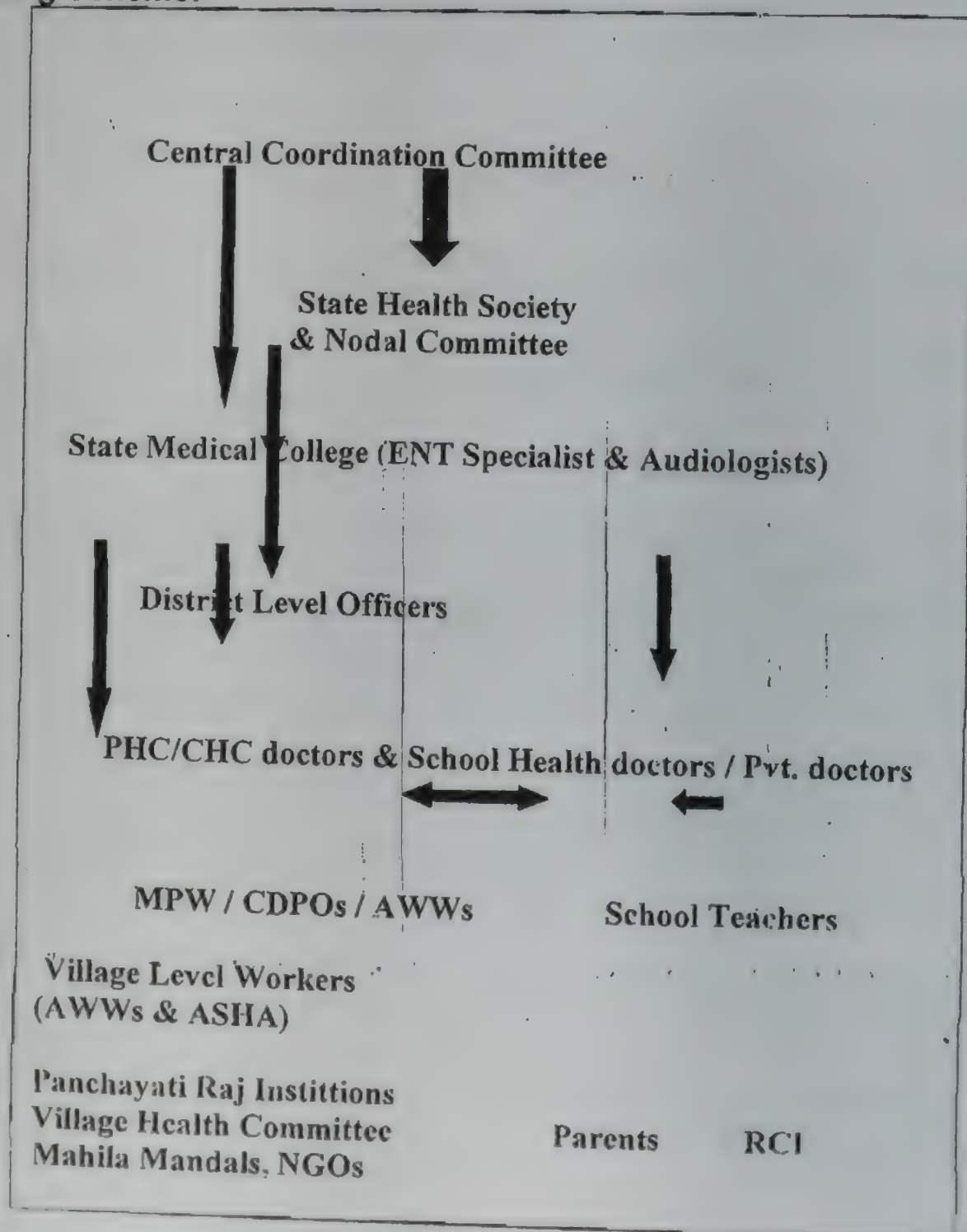
**Need based training** would be imparted, during the pilot phase and continued during the 11<sup>th</sup> Five year plan, to the following functionaries at all levels:

- Sensitization of the State medical college experts
- District level ENT officers



- Audiologists & Audiometricians
- Medical Officers under CHC/PHC
- Obstetricians and Pediatricians at the district and CHC level
- Medical Officer under School Health Scheme
- Medical Officers involved in industrial health available in the district
- Multi Purpose Workers male and female
- Primary School teachers at village level
- Members of Pachayats/Mahila Mandals/Youth leaders & Parents
- Functionaries at grass root level such as
  - Anganwadi workers
  - Accredited Social Health Activist (ASHA)
  - Trained Birth Attendants
- Parents

#### Training Scheme:



## **Service Provision Including Rehabilitation**

**Service components will include:**

- Early detection
- Ear Screening camps
- Treatment: medical and surgical
- Appropriate referral
- Rehabilitation of hearing and speech disorders and hearing aid provision.
- Awareness creation in the community.

### **Early Detection**

- The detection would be by sensitized personnel at grass root level including family members/parents, selected school teachers, MPWs at subcentre level, Public Health Nurses & medical officers in PHCs and CHCs and district level personnel. Personnel at all levels would be assigned a specific task in order to ensure that the right guidance is provided at the appropriate time to the affected persons.
- House to house surveys will be conducted by the AWWs & ASHAs, under the supervision of the male and female MPWs for detection of cases of hearing impairment and deafness. The deafness cases will be noted in the disability column of ANM's village register.
- The MPWs will maintain records of each family based on a Family proforma provided to them.
- The District level Paediatricians and Gynaecologists will be responsible for referring any child born of a high risk pregnancy or delivery, as well as other children who are exposed to a high risk factor in infancy and who show features suggestive of hearing impairment. These children will be screened by the district level ENT doctor / Audiologist with OAE and then subjected to diagnostic tests.
- School teachers will undertake to screen the children in the school with the help of pre-prepared proformas. These will help to identify children with any ear or hearing problem. They will then be referred to the School Health doctor for evaluation, diagnosis and guidance regarding treatment.

### **Ear Screening Camps**

#### **Functions**

- Screening camps will be organized at the PHC/CHC and District level for screening the general population in respect of ear problems, hearing impairment and deafness.
- Detection and treatment of common ear problems.



- Spreading awareness regarding ear problems, early detection of deafness, available treatment and health care facilities for referral of such cases.
- Education of community, especially the parents of young children regarding importance of right feeding practices, various common ear problems, early detection of deafness in young children and available treatment for hearing impairment/deafness.
- Education of Panchayat members, members of Mahila Mandals and Youth leaders.

### **Conduct of Screening Camps**

- Ear screening camps will be conducted by the PHC/CHC doctors and district level ENT specialists, trained under the programme.
- The screening camps will be facilitated by the NGOs, identified by the District Health Society. These NGOs will require adequate infrastructure to carry out screening camps and experience of work at the community level.
- One screening camp will be organized per month at any PHC or CHC or District hospital by rotation. Total 24 camps will be organized in each district over a period of 2 years.

### **Treatment**

Treatment of all affected persons would be undertaken at the following levels:

- Public Health Nurses and MPWs: would provide treatment of common ear ailments such as Wax, Acute Suppurative Otitis Media etc. under the guidance of the PHC doctor. The Public Health Nurses & MPWs will have the capacity to distribute relevant ear drops and medicines under the guidance of the PHC doctor.
- Trained PHC/CHC doctors will provide early diagnosis of ear diseases and treatment of all common ear ailments. All persons requiring special diagnostic facilities, complicated cases and those needing surgical intervention will be referred to the District hospital.
- District hospital: The District level ENT doctors and Audiologists will provide comprehensive preventive, promotive and curative and medical rehabilitative services. Wherever feasible, suitable linkages would be developed with the Comprehensive Rehabilitation Centres (CRC) and DDRC in coordination with the Ministry of Social Justice & Empowerment, for provision of rehabilitative services.
- The District level Paediatricians will also be responsible for treating ear diseases such as Acute Otitis media, so that progress to Deafness can be prevented.

## **Referral services**

Effective linkages would be developed from peripheral level to district level with the help of functionaries and personnel from grass root level (AWW, ASHA and sensitized parents and PRIs), subcentre level (Male and female MPWs), PHC level medical officers, Public health nurses, School teachers and School health doctors, private practitioners and District level officers.

## **Rehabilitation and Hearing Aid provision**

- All patients who are identified as having an ear problem that either requires surgery, hearing aid fitting or rehabilitative therapy will be referred to the ENT doctor and Audiologist at the district level.
- Those who need surgery will be given the appropriate treatment at the district hospital.
- Complicated cases that cannot be adequately handled at the District hospital will be further referred to the State Medical College for expert treatment.
- Patients who suffer with Sensorineural hearing loss that is not amenable to medical or surgical correction and which requires hearing aid, will be fitted with the same at the district level. This will include children who are suffering with Bilateral sensorineural hearing loss.
- The hearing aids will be issued as per existing rules. It is proposed that collaboration with the Ministry of Social Justice & Empowerment will be established for this purpose.
- The requirement for Speech therapy and Hearing therapy will be met with by the Audiologist at the District level.

## **Budget**

About 200 hearing aids will be given in each district for fitting to suitable persons. At the rate of Rs. 1000 per Hearing aid, it will amount to a budget of Rs. 200,000 per district per year.

## **Awareness Creation among Parents/ community :**

- Community level health workers and doctors will undertake this activity on a continuous basis. This will also form a part of the IEC activities at various levels.
- Sensitization will be done regarding various aspects relating to early detection of hearing loss. They will be educated about the various ill effects of hearing loss on the speech, mental and social development of the child.
- Information regarding various treatment modalities as well as techniques of rehabilitation.



- Sensitization to ill effects of hearing loss in the elderly so that they may refer the aged hearing impaired persons for suitable management/rehabilitation.

### Capacity Building

**At the PHC and CHC level:** for screening of ear morbidity and detection of hearing loss, the equipment required would be:

#### Equipments required:

- Otoscope
- Pure Tone Screener

Would be provided to all PHCs/CHCs in the selected districts, during the pilot phase and the 11<sup>th</sup> year plan.

#### Logistics/Medicines:

Medicine kit i.e. Borospirit ear drops, wax dissolving drops and Antibiotic ear drops, including cotton swabs and normal saline solution, for use by the Health care workers.

### District Hospital

The District hospital is to be an important center for the management of ear problems and deafness cases, which are referred from the health care facilities at various levels.

Equipment required:	Cost in Rs.
Microscope	100,000
2 sets of Microdrills with 2 handpeices and burrheads	50,000
2 sets of micro-ear surgery instruments.	20,000
Pure Tone Audiometer	30,000
Impedance Audiometer	200,000
OAE machine	300,000
Sound treated room	2,50,000
Total for one district	9,50,000
Total for 25 districts	2,37,50,000

#### Budget :

- Rs. 9,50,000/- per district

## **State Medical College**

Medical colleges with existing audiological and ENT set up will be chosen.

## **Information, Education & Communication Activities**

Innovative IEC strategies would be devised for the purpose of creating awareness regarding Hearing impairment, its causes, ill effects and treatment and to dispel the commonly held beliefs and myths in this regard. Already available IEC material developed by AIISH, Mysore and Ali Yavar Jang Institute of Hearing Handicapped, Mumbai, will also be collated.

The IEC activities would have to be co-ordinated by the Central Coordination Cell. The strategies would focus on :

- IEC activities by workers and doctors at all levels of Health Care Delivery during home visits or patient care in the Health care facility.
- Through Electronic Media: By advertisements / messages over the radio or TV
- Through print media such as:
  - Posters
  - Advertisements in newspapers, magazines etc
  - Leaflets on Hearing loss and its causes, treatment and ill effects
- Collaboration with the institutes such as IGNOU and RCI

The Central Co-ordination Committee will hire the services of reputed agencies to develop appropriate IEC material for the programme.

Budget (for IEC activities including the printing of proformas): **Rs. 1.5 crore per year**

## **Monitoring & Evaluation**

**Monitoring & Evaluation of the programme would be done with regard to:**

- Manpower training: The number of manpower trained will be recorded.
- Capacity building: Number of districts and PHCs provided with the equipment.
- The prevalence of hearing loss in the districts. ( assessed on the basis of the Family based proformas maintained by the MPWs at the Subcentre level and the School based proformas filled by the school teachers).
- The number of ear cases referred for diagnosis and treatment to the PHCs, CHCs and District Health Centres.
- The number of persons rehabilitated with hearing aids and therapy under the programme.



- The persons identified and treated with hearing loss and ear diseases at the Screening camps.
- The number of patients who receive treatment at the District hospital and the State medical College level.

### **Expected Benefits of The Programme**

The programme is expected to generate the following benefits in the short as well as in the long run.

- i. Large scale direct benefit of various services like prevention, early identification, treatment, referral, rehabilitation etc. for hearing impairment and deafness as the Primary Health Centres / Community Health Centres / District Hospitals largely cater to their need.
- ii. Decrease in the magnitude of hearing impaired persons
- iii. Decrease in the severity/ extent of ear morbidity or hearing impairment in large number of cases.
- iv. Improved service network for the persons with ear morbidity/hearing impairment in the states and districts covered under the project.
- v. Awareness creation among the health workers/grassroot level workers through the Primary Health Centre Medical Officers and district officers which will percolate to the lowest level as the lower level health workers function within the community.
- vi. Larger community participation to prevent hearing loss through PRIs, Mahila Mandals, Village bodies and also creation of a collective responsibility framework in the broad spectrum of the society.
- vii. Leadership building in the Primary Health Centre Medical Officers to help create better sensitization in the grassroots level which will ultimately ensure better implementation of the Programme.
- viii. Capacity Building at the district hospitals to ensure better care.
- ix. State of the art Department of ENT at the medical colleges in the state/union territory under the project.

## Budget

**Total Budgetary Requirement (over 4 years, ie: 2008-2012):  
Rs. 1,24,00,56,000**

S.No.	Component	Year 1 (2008-2009)	Year 2 (2009-2010)	Year 3 (2010-2011)	Year 4 (2011-2012)	GRAND TOTAL (OVER 4YEARS)
1	Training	8,73,90,000	8,73,90,000	8,54,48,000	8,54,48,000	34,56,76,000
2.	Capacity Building PHCs/CHCs & District Hospitals	6,07,50,000	6,07,50,000	5,94,00,000	5,94,00,000	24,03,00,000
3.	Manpower at district level	1,26,00,000	2,07,00,000	2,86,20,000	3,65,40,000	9,84,60,000
4.	Screening Camps	1,82,00,000	2,99,00,000	4,13,40,000	5,27,80,000	14,22,20,000
5.	Hearing Aids	1,40,00,000	2,30,00,000	3,18,00,000	4,06,00,000	10,94,00,000
6.	IEC Activities (including printing of proformas)	1,50,00,000	1,50,00,000	1,50,00,000	1,50,00,000	6,00,00,000
7.	Central Cell	10,00,000	10,00,000	10,00,000	10,00,000	40,00,000
8.	Monitoring & Evaluation	Nil	Nil	Nil	2,00,00,000	2,00,00,000
9.	Misc. & Contingency (20% of project cost)	4,00,00,000	5,00,00,000	6,00,00,000	7,00,00,000	22,00,00,000
	<b>ANNUAL TOTAL</b>	<b>24,89,40,000</b>	<b>28,77,40,000</b>	<b>32,26,08,000</b>	<b>38,07,68,000</b>	<b>124,00,56,000</b>



# MEDICAL REHABILITATION

## Executive Summary

### Estimated Disease Burden

With the ongoing health, demographic and socio-economic transitions, the Disability Profile is changing, with an alarming rise in the incidence of people suffering from chronic disorders and associated morbidity and disability. According to census (2001), there were 2.19 crores persons with visual, hearing, speech, locomotor and mental disabilities in India (2.13% of the total population). 75% of them live in rural areas with limited access to health care services. Of the disabled population, locomotor disabled constitute over 50%, Speech and Hearing 15%, Visual 14%, mentally retarded and mentally ill 9%, and those with multiple disabilities 10%. Population over 60 years of age (7.5%) have disabilities affecting multiple systems.

### Status of ongoing Central sector/ Centrally sponsored disease control programme

The National Disability Policy had underscored the need to train medical students at Undergraduate and Postgraduate Degree/Diploma level on Disability Prevention, early detection and interventions and development of rehabilitation professional. Rehabilitation services have to be provided by inter-disciplinary team. To provide rehabilitation services at all levels health care delivery system, adequate manpower and interdisciplinary team development has to be an essential component of programme. The Central Council of Health and FW had deliberated on these issues at its 5<sup>th</sup> and 6<sup>th</sup> meetings and recommended setting up of PMR departments in all Medical Colleges. This is also a mandatory requirement from the Medical Council of India for starting any medical college. A Pilot Project on Medical Rehabilitation, aimed at integrating community based rehabilitation as a component of primary health care with strengthening of referral system at the district and sub-district level was undertaken in the 8<sup>th</sup> Plan at AIIPMR Mumbai. During the 10<sup>th</sup> Five Year Plan period, the scheme "upgradation of facilities in the department of PMR in Medical Colleges" amounting to Rs.5.2 crores was approved by the SFC held the chairmanship of Secretary (H) on 26.7.04.

The Scheme aims at strengthening of the equipments and manpower. In the last financial year 4 medical colleges i.e. JIMPER Pondicherry, Govt. Medical College & Hospital, Chandigarh, Lady Harding Medical College & Associated Hospitals, New Delhi, UCMS and GTB Hospital Delhi were taken up for the strengthening of equipments. During the current financial year these institutions will be taken up for the manpower requirements and the equipments. Since there was no separate allocation of budget for these activities as the allocation was merged with the AIIPMR, Mumbai, there were some difficulties for the implementation.



## **Objective**

To build capacity in Medical Colleges and District Hospitals and train adequate manpower required for Medical rehabilitation programme at all 3 levels of Health Care Delivery System. Towards this end, it is planned to (i) to upgrade and develop two apex PMR departments in the country to act as Model Centres (ii) to set up PMR Departments in 30 Medical Colleges/Teaching Institutions (at least one in each state), (iii) each such department to adopt one district, CHC & PHC in the state for developing medical rehabilitation services, (iv) train medical and rehabilitation professionals in adequate number for providing secondary and tertiary level rehabilitation services (v) training programme on Disability Prevention, Detection and Early Intervention at Diploma, U.G. & P.G. level, (vi) train 200 district-level Specialists and Health Professionals in Disability Assessment Computation, Prevention and Rehabilitation through Community-based Rehabilitation, (vii) provide Rehabilitation Services in Medical Hospitals and evolve strategy of continuum of care in the domiciliary and community set up, and (viii) develop capacity in one district in each state/UT along with sub-districts hospitals.

## **Strategy**

Rehabilitation services will be established from sub-centre to the district and state level as a pilot project by respective medical college while ensuring its integration in the existing primary health care system. Two existing major PMR departments (viz; department of Rehabilitation, Safdarjang Hospital and AIIPMR, Mumbai) will be upgraded and developed in order to provide technical expertise for the implementation of the scheme. The capacity will be built up in the Medical Colleges in terms of equipment and manpower. Rehabilitation Services will be established in selected districts at District Hospital, CHC & PHC. Thirty medical colleges will provide rehabilitation services with particular focus on Jammu and Kashmir, North-East Region, Andaman and Nicobar Islands. Medical College students at under-graduate level will be trained in Medical Rehabilitation, as also District hospital, CHC & PHC level health personnel and health functionaries at grass-root level in Disability Prevention and Rehabilitation. Medical Rehabilitation services will be provided to People with disability. Medical Officers will be trained in disability assessment and computation for issuing disability certificates.

## **Monitoring:**

A Rehabilitation Technical Committee (RTC) to be constituted by the DGHS will plan and monitor the progress of the programme.

## **Research Priorities**

1. Surveillance of incidence and prevalence of various disabilities due to non-communicable disorders, and estimation of Disability Adjusted Life



Years/Quality Adjusted Life Years of the chronic Non-communicable Diseases causing disability.

2. Assess Quality of Life of Persons with Disability due to Non-communicable Diseases.
3. Estimate the morbidity and disabilities in the elderly population.

**Budgetary Estimate: Rs.119 crores**

## **Introduction**

I. Recently, **National Policy for Persons with Disabilities** has been enunciated by the Nodal Ministry – Ministry of Social Justice and Empowerment, Government of India, in which principal areas of interventions and responsibilities of implementation for all concerned Ministries have been clearly stated.

The formulation and implementation of programmes for 11<sup>th</sup> Five Year Plan spanning from 2007-2012 will have to be in accordance with the declared policy.

### **I. Magnitude of the Problem**

The estimates of disability vary as per the inclusion/exclusion criteria. More often such estimates are the point prevalences and do not reflect actual incidence and causes. However, according to census (2001) there are 2.19 crores persons with disabilities in India who constitute 2.13% of the total population. This includes persons with visual, hearing, speech, locomotor and mental disabilities. 75% of the persons with disability live in rural areas who have had limited access to healthcare services. Locomotor disabled constitute more than 50% of the total disabled population, Speech and Hearing 15%, Visual 14%, mental retardation and mental illness 9%, multiple disability 10%.

The Disability Profile is changing as country is passing through health, demographic and socio-economic transitions. Public health interventions have been successful in reducing to a great extent the prevalence of communicable disease, nutritional disorders causing disability. On the other hand there is alarming rise in the incidence of people suffering from chronic disorders with associated morbidity and disability.

### **Causes of disability**

- i) Communicable , maternal and perinatal - 22%
- ii) Non-communicable - 43%
- iii) Injuries, etc. - 14%

(Source - Murray C J L, Lopez AD)

There is more non-communicable disability in India than in the established market economies. The distribution of year-lost due to disability is shifting away from communicable to non-communicable diseases.

In addition to above, 7.5% of the total population are above the age of 60 years, who have disabilities affecting multiple systems.

The future projections of the prevalence of moderate and severe disability by the year 2020 will be

0 - 14 years	- 7.2 million
15 - 29 years	- 7.9 million
30 - 59 years	- 27.9 million
More than 60 years	- 35.4 million

(Source - Population Data UNFPA, Geneva, 1995)

### **III. Resolutions of Central Council of Health:**

In a Central Health Council Conference (5<sup>th</sup> and 6<sup>th</sup>) the role of health sector in implementation programmes for Persons With Disabilities have been deliberated and council recommendation are enclosed.

### **IV. National Policy statement relevant to Health Sector are:**

- i) Prevention of disabilities
- ii) Rehabilitation measures
  - Clause (a) early detection and intervention
  - (b) counseling and medical rehabilitation
  - (c) assistive devices
  - (d) development of rehabilitation professionals
- iii) Women With Disabilities
- iv) Children with Disabilities
- v) Issue of Disability Certificates
- vi) Research

Response of implementation and inter ministerial relationship has been formed.

### **Principal areas of Intervention relevant to Health Sector:**

- i) Expansion of immunization
- ii) Prevention, early detection and intervention.
- iii) There is emphasise on training of medical and para-medical personnel, preparation of training modules and so as to provide support various programmes, which suffer due to shortage of manpower.



- iv) Among the various interventions prescribed in Section VIII states appropriate plan of action for limitation of the disability and prevention of secondary disabilities within the existing health delivery system.
- v) School Health Programme include screening for disability
- vi) National Rural Health Mission through ASHA addresses the health needs of rural population especially the vulnerable sections of society. The ASHA inter-alia will take care of comprehensive service of Persons With Disabilities at the grass root level.

## V. Programmes initiated

- a) Pilot Project on Medical Rehabilitation, a project with objective of integrating community based rehabilitation as a component of primary health care with strengthening of referral system at the district and sub-district level undertaken during the 8<sup>th</sup> 5 year Plan was translated into National Programme of Rehabilitation an activity of AIIPMR.
- b) During the 10<sup>th</sup> Five Year Plan period, the scheme "upgradation of facilities in the department of PMR in Medical Colleges" amounting to Rs.5.2 crores was approved by the SFC held the chairmanship of Secretary (H) on 26.7.04.  
The Scheme aims at strengthening of the equipments and manpower. In the last financial year 4 medical colleges i.e. JIMPER Pondicherry, Govt. Medical College & Hospital, Chandigarh, Lady Harding Medical College & Associated Hospitals, New Delhi, UCMS and GTB Hospital Delhi were taken up for the strengthening of equipments. During the current financial year these institutions will be taken up for the manpower requirements and the equipments. Since there was no separate allocation of budget for these activities as the allocation was merged with the AIIPMR, Mumbai, there were some difficulties for the implementation.
- c) National Programme for Mental Health and NLEP, National Iodine Deficiency Control Programme, National Blindness Control Programme, etc. are already under implementation wherein there are inbuilt rehabilitation components and there has to be proper inter-programme linkages from point of Rehabilitation.
- d) National Programme for Prevention of Deafness is about to be unveiled

## Setting up of department of physical medicine and rehabilitation in Govt. Medical colleges

### 1. Background

The main issue highlighted in the National Disability Policy is to train medical personnel at Undergraduate and Postgraduate Degree/Diploma level in the field of



medical education to include modules of Disability Prevention, early detection and interventions and development of rehabilitation professional. Human resource requirements for rehabilitation of persons with disabilities will be assessed and development plan will be prepared so that rehabilitation strategies do not suffer from lack human power.

As of today, most of the Medical Colleges in India do not have Physical Medicine and Rehabilitation department. Even Government run Medical Colleges do not have full-fledged Department of Physical Medicine and Rehabilitation. As a consequence, majority of Doctors and Paramedical professionals do not undergo training in management of disabilities and lack knowledge and skills required for communication and provision of services resulting in inadequate access and unsatisfactory service delivery. Most of the programmes and projects have suffered due to lack of rehabilitation professionals and lack of referral system. Inadequate development of referral system in turn depriving the needy clients, ie disabled who would have been benefited by such services. The concept of comprehensive rehabilitation, therefore, does not exist among conventional medical practitioners/professionals. Therefore, the importance of rehabilitation services by inter-disciplinary team does not need emphasis.

If the goal is to provide rehabilitation services at all levels of health care delivery system, then adequate manpower and interdisciplinary team development has to be an essential component of program.

These issues have also been deliberated in the 5<sup>th</sup> and 6<sup>th</sup> Central Council of Health meetings and recommended for setting up of Physical Medical and Rehabilitation departments in all Medical Colleges was made, though it is mandatory from the Medical Council of India Act for starting any medical college.

To address this deficiency the setting of PMR departments in Medical Colleges/teaching institutes to provide services and training Medical College Students and health manpower is considered essential, particularly in Jammu and Kashmir, North-East Region, Andaman and Nicobar Islands.

Therefore continuation of this programme in the 11<sup>th</sup> Five Year Plan is duly justified with renewed targets.

## **2. General Objective**

To build capacity in the Medical Colleges and District Hospitals and to train adequate manpower required for Medical rehabilitation programme at all 3 levels of Health Care Delivery System.



## 2.1 Sub-Objectives

- a. To set up Department of Physical Medicine and Rehabilitation in 30 Medical Colleges/Teaching Institution (at least one college in each state)
- b. Each Physical Medicine and Rehabilitation Department to adopt one district, CHC & PHC in their state for developing the medical rehabilitation services
- c. In keeping with National Policy for PWD to train medical and rehabilitation professionals in adequate number for providing secondary and tertiary level rehabilitation services.
- d. Training programme on Disability Prevention, Detection and Early Intervention at Diploma U.G. & P.G. level.
- e. To train the District level Specialists and Health Professionals in Disability Assessment Computation, Prevention and Rehabilitation through CBR.
- f. Provision of Rehabilitation Services in the setting of Medical Hospitals in all departments and evolve strategy of continuum of care in the domiciliary and community set up.
- g. Develop capacity in one of the districts and sub-districts hospitals.
- h. To upgrade and develop two apex PMR departments in the country, to act as Model teaching and training centers with comprehensive service delivery system including inpatient services, Rehabilitation surgery and community based rehabilitation services.

## 3. Target

- a. Setting up of Physical Medicine and Rehabilitation Department in 30 Medical College/Teaching Institutions.
- b. Capacity building of 30 District Hospitals linked to, and to be evolved by Medical Colleges where the departments of PMR have been set up.
- c. Training of 200 Medical Specialists and allied health professionals in disability assessment and early identification.
- d. Linking of Medical Rehabilitation to impairments and functional limitation arriving out of acute and chronic conditions taking treatment at Medical Colleges.
- e. To upgrade and develop two model PMR departments (One in north and one in West).

## 4. Strategy

- a. It is proposed that the Government Medical Colleges are selected in consultation with the Directorate of Medical Education of the respective states by the Nodal Officer.

- b. The proposed strategy is to establish rehabilitation services from sub centre to the district and state level as a pilot project by respective medical college and integrate it with the existing primary health care system.
- c. It is proposed to upgrade and develop two existing PMR departments (viz: AIIPMR, Mumbai and PMR Department, Safdarjang Hospital, New Delhi).

## **5. Implementation Strategy**

- a. Directorate of Medical Education of respective states will be consulted for selection of the Medical College in the district and space allocation.
- b. Assess the existing facilities and subsequent capacity building of the Medical College in terms of equipment and manpower in keeping with MCI norms.
- c. Selection of the district, by State authorities and Medical College for establishing Rehabilitation Services at District Hospital, CHC & PHC.
- d. Training of Medical College students at under-graduate level in Medical Rehabilitation.
- e. Training of District hospital, CHC & PHC level health personnel and health functionaries at grass-root level in DPR.
- f. Provision of Medical Rehab. services to PWD viz., Medical, P.T., O.T., S.T., fitment of aids and appliances, mobility aids, counseling and follow-up.
- g. Training of Medical Officers in disability assessment and computation for issual of disability certificates.
- h. Two identified model PMR centres shall provide technical expertise for implementation of the proposed scheme.

## **6. Monitoring**

- 1. The DGHS may constitute Rehabilitation Technical Committee to provide consultancy service for establishment of these departments in Medical Colleges who will also monitor the progress of meeting the target.
- 2. DMER/Director of Medical College to prepare the detailed plan of action year-wise in consultation with Nodal Officer and Rehabilitation Technical Committee to ensure furnishing of information regarding progress of work periodically.
- 3. Evolving guidelines for management of all impairments and disabilities arising from communicable and non-communicable disorders and issual of the same to all departments.
- 4. Periodic review meetings - on a six monthly basis.



## 7. Expected Achievements/Outcomes

Expected achievements by the end of 11<sup>th</sup> Five Year Plan:

- Well developed inter-disciplinary team for comprehensive rehabilitation services will be available in PMR department in 30 Medical Colleges.
- Comprehensive rehabilitation units in 32 districts and sub-district health set-up.
- Availability of two Model PMR centres in the country (one in north and one in west) with full fledged extension services down to the grass root level.
- Undergraduate and Post-graduate in Medical Education will be oriented to disability prevention and rehabilitation with special emphasis on chronic disorders.
- This will pave way for overcoming moderate to severe shortage of manpower in the field of rehabilitation over a period of time and facilitate integration of rehabilitation services at all Health Care Delivery system.

## 8. Resources

### Manpower Resource Required For Physical Medicine And Rehabilitation Department Of Medical College

MCI has recommended following norms for setting up department of Physical Medicine and Rehabilitation.

S.No.	Name of post	Pay Scale	No.of posts	Annual Expenditure
1.	Asstt.Professor (PMR)	10000-15000	3	9,00,000
2.	Physiotherapists	5500-9000	2	3,20,000
3.	Occupational Therapist	-do-	2	3,20,000
4.	Speech Therapists	-do-	1	1,60,000
5.	Prosthetic & Orthotic Tech.	-do-	2	3,20,000
6.	Workshop Worker	3050-4590	6	6,00,000
7.	Clinical Psychologist	5500-9000	1	1,60,000
8.	Medico Social Worker	5500-9000	1	1,60,000
9.	Public Health Nurse	5500-9000	1	1,60,000
10.	Vocational Counsellor	5500-9000	1	1,60,000
11.	Multi Rehabilitation Worker	4000-6000	4	5,00,000
12.	Stenographer-cum-Data Entry Operator	4000-6000	1	1,25,000
13.	Record Clerk	3050-4590	1	1,00,000
14.	Store Keeper	4000-6000	1	1,25,000
15.	Helper/Asstt.	2550-3200	4	3,50,000

Total

= 44,60,000

Total expenditure for 30 medical colleges

- Rs.44,60,000 X 30 = Rs.13,38,00,000/-

# Manpower Resource Required For Model Physical Medicine And Rehabilitation Department

S.No.	Name of post	Pay Scale	No.of posts	Annual Expenditure
1.	Asstt.Professor/ Specialist Gr. II (PMR)	10000-15000	4	12,00,000
2	Anaesthetist Gr. II	10000-15000	1	3,00,000
3	Senior Resident (PMR)	10940-11650	4	10,80,000
4	Junior Resident	9400-10050	4	9,60,000
5.	Physiotherapists	5500-9000	3	4,80,000
6.	Occupational Therapist	-do-	3	4,80,000
7.	Speech Therapists	-do-	1	1,60,000
8.	Orthotist & Prosthetist	-do-	2	3,20,000
9.	Orthotic & Prosthetic Engineer.	10000-15200	1	2,70,000
10.	Clinical Psychologist	5500-9000	1	1,60,000
11.	Medico Social Welfare Officer	6500-10500	1	1,90,000
12.	Health Education Officer	6500-10500	1	1,90,000
13.	Lecturer (P&O)	6500-10500	2	3,80,000
14.	Public Health Nurse	5500-9000	1	1,60,000
15.	Staff Nurse	5000-8000	10	15,70,000
16.	Vocational Instructor	5000-8000	2	3,02,000
17.	Multi Rehabilitation Worker	4000-6000	4	5,00,000
18.	Stenographer-cum-Data Entry Operator	4000-6000	1	1,25,000
19.	Record Clerk	3050-4590	1	1,00,000
20.	Store Keeper	4000-6000	1	1,25,000
21.	Helper/Asstt.	2550-3200	4	3,50,000
22	Rehabilitation Therapist	5500-9000	4	6,40,000
23	Asstt. Prof. (P&O)	10000-15200	2	5,40,000
24	Driver	3050-4950	1	1,00,000
<b>Total</b>			<b>= 1,06,82,000</b>	



### Human Resource In Proposed Physical Medicine And Rehabilitation Department At District Level

S.No	Name of post	Pay scale	No.of post	Annual Expenditure
1.	Specialist (PMR)	10000-150000	1	3,00,000
2.	Prosthetist & Orthotist	5500-9000	1	1,60,000
3.	Physiotherapist	-do-	1	1,60,000
4.	Occupational Therapist	-do-	1	1,60,000
5.	Speech Therapist	-do-	1	1,60,000
6.	Medical Social Worker	-do-	1	1,60,000
7.	Psychologist	-do-	1	1,60,000
8.	Skilled Worker	3050-4590	2	2,00,000

**Total**

**Rs.14,60,000**

**Total for 32\* Districts**

**Rs.4,67,20,000/-**

\* two in states having Model PMR departments

### Manpower In Proposed Physical Medicine And Rehabilitation Department At CHC

S.No.	Name of post	Pay scale	No.of post	Annual expenditure
1.	Medical Officer (PMR)	8000-13500	1	2,50,000
2.	M.R.W.	4000-6000	1	1,25,000

**Total**

**Rs.3,75,000**

**Total for 32\* CHCs**

**Rs.1,20,00,000/-**

\* Two in states having Model PMR departments

### Manpower Proposed In PHC

S.No.	Name of post	Pay scale	No.of post	Annual expenditure
1.	M.R.W.	4000-6000	1	1,25,000

**Total**

**Rs.1,25,000**

**Total for 32\* PHCs**

**Rs.40,00,000/-**

\* two in states having Model PMR departments

## 9.1 Non-recurring

### Budgetary Estimate For Equipments For Each Setup

Sections	Med. Colleges	District Hospital	CHC	PHC	Total
Physiotherapy	8,00,000	4,50,000	1,75,000	1,25,000	15,50,000
Occupational Therapy	10,00,000	7,00,000	1,00,000	50,000	18,50,000
Prosthetic & Orthotic	7,50,000	5,00,000	4,00,000	3,50,000	20,00,000
Speech Therapy	11,50,000	11,50,000	1,25,000	1,25,000	25,50,000
Psychology	50,000	35,000	-	-	85,000
<b>Total:</b>	<b>37,50,000</b>	<b>28,35,000</b>	<b>8,00,000</b>	<b>6,50,000</b>	<b>80,35,000</b>

### Budgetary Estimate For Equipment For Model Physical Medicine And Rehabilitation Centres

Sections	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Rehabilitation Surgery	14,00,000					14,00,000
Physiotherapy	32,00,000	2,00,000		1,00,000	1,00,000	36,00,000
Occupational Therapy	7,00,000			1,00,000		8,00,000
Prosthetic & Orthotic	25,00,000	21,00,000	10,00,000			56,00,000
Speech Therapy	5,00,000	2,00,000	2,00,000	2,00,000	50,000	11,50,000
Psychology & Vocational	2,00,000					2,00,000
Wards	14,00,000	10,00,000			5,00,000	29,00,000
Training	3,00,000	1,00,000	1,00,000		3,00,000	8,00,000
OPD & Diagnostic Services	2,00,000	50,00,000	6,00,000	5,00,000		63,00,000
Vehicle		8,00,000				8,00,000
<b>Total:</b>	<b>1,04,00,000</b>	<b>94,00,000</b>	<b>19,00,000</b>	<b>9,00,000</b>	<b>9,50,000</b>	<b>2,35,50,000</b>



## Cumulative Budgetary Estimate For Equipment For 5 Years

(Figures in Crores)

Year	2007-08	2008-09 X 7	2009-10 X 7	2010-11 X 7	2011-12 X 4	Total (in crores)
Medical Colleges (5)	1.88	2.63	2.63	2.63	1.50	11.27
Model PMR centres	1.04	0.94	0.19	0.09	0.10	2.36
Districts (7)	1.98	1.98	1.98	1.98	0.12	8.04
CHC (7)	0.56	0.56	0.56	0.56	0.32	2.56
PHC (7)	0.46	0.46	0.46	0.46	0.26	2.10
Total	5.92	6.57	5.82	5.72	2.30	26.33

### Capital Expenditure Outlay For The Model Pmr Departments\*

(Rupees in crores)

YEAR	2007-08	2008-09	2009-10	2010-11	2011-12	Total
AMOUNT	1.50	2.50	-	-	-	4.00

\* For Construction of 2. floors in the present new OPD wing of rehabilitation department Safdarjung Hospital New Delhi to provide for space for training division, various specialized labs.

## 9.2 Recurring Budget

### Year-Wise Budgetary Outlay For Manpower – New

(Figures in crores of Rupees)

Year	2007- 2008	2008- 2009 X 7	2009- 2010 X 7	2010- 2011 X 7	2011- 2012 X 4	Total (in crores)
Medical Colleges (5)	2.23	3.12	3.12	3.12	1.79	13.38
Model PMR centres	1.07	-	-	-	-	1.07
Districts (7)	1.02	1.02	1.02	1.02	0.58	4.66
CHC (7)	0.26	0.26	0.26	0.26	0.15	1.19
PHC (7)	0.09	0.09	0.09	0.09	0.05	0.41
Total	4.67	4.49	4.49	4.49	2.57	20.07

### Cumulative Budgetary Estimate Year Wise For Manpower During 5 Years

(Figures in Crores)

Year	2007-2008	2008-2009 X 7	2009-2010 X 7	2010-2011 X 7	2011-2012 X 4	Total
Medical Colleges (5)	2.23	5.35	8.47	11.59	13.38	41.02
Model PMR centres	1.07	1.17	1.30	1.43	1.60	6.57
Districts (7)	1.02	2.04	3.06	4.08	4.66	14.86
CHC (7)	0.26	0.52	0.78	1.04	1.19	3.79
PHC (7)	0.09	0.18	0.27	0.36	0.41	1.31
Total	4.67	9.26	13.88	18.50	21.24	67.55

### Cumulative Budgetary Estimate For Materials & Supplies For 5 Years

(Rupees in crores)

Year	2007-2008	2008-2009 x 7	2009-2010 x 7	2010-2011 x 7	2011-2012 x 4	Total
5 Medical Colleges + 2 Model PMR centres	0.28	0.56	0.84	1.12	1.28	4.08
Districts (7)	0.21	0.42	0.63	0.84	0.96	3.06
CHC (7)	0.14	0.28	0.42	0.56	0.64	2.04
PHC (7)	0.07	0.14	0.21	0.28	0.32	1.02
Total	0.70	1.40	2.10	2.80	3.20	10.20

### Cumulative Budgetary Estimate For Maintenance And Office Expenses For 5 Years

Year	2007-2008	2008-2009 x 7	2009-2010 x 7	2010-2011 x 7	2011-2012 x 4	Total (in crores)
Medical Colleges (5)	0.15	0.36	0.57	0.78	0.90	2.76
Model PMR centres	0.06	0.07	0.09	0.10	0.12	0.44
Districts (7)	0.14	0.28	0.42	0.56	0.64	2.04
CHC (7)	0.07	0.14	0.21	0.28	0.32	1.02
PHC (7)	0.035	0.07	0.105	0.140	0.16	0.51
Total	0.455	0.92	1.395	1.86	2.14	6.77



### 9.3 Head-Wise Budgetary Estimate

#### At A Glance For 5 Years

(Figures in crores)

1)	Capital Works	4.00
2)	Manpower	67.55
3)	Equipment	26.33
4)	Material and Supplies	10.20
5)	Maintenance & Office Expenses	6.77
6)	Miscellaneous	3.80
	Total:	118.65

Rounded off to Rs.119.00 Crores

ANNEXURE - I

Equipment

1) Physiotherapy Section:

Sr. No.	Name of the Instrument	Medical Colleges	District	CHC	PHC	Total
1.	Foam Floor Mats	2	2	1	1	6
2.	Exercise staircase	1	1	1	-	3
3.	Equilibrium Board	1	1	1	-	3
4.	Parallel Bars	2	2	1	1	6
5.	Tilt Table	1	1	-	-	2
6.	Multiexerciser	1	1	1	-	3
7.	Evaluation Kit	1	1			
8.	Suspension Apparatus	1	1	1	1	4
9.	Springs	5	5	5	5	20
10.	Weights	5	5	5	5	20
11.	Mirror	2	2	1	1	6
12.	Quadriceps Table Bench	1	1	1	1	4
13.	Stationary Bicycle	1	1	1	1	4
14.	Mobility Aids	3	3	3	3	12
15.	Walker	3	3	3	3	12
16.	Electrotherapy:- Paraffin Wax Bath (Hospital Model)	1	1	1	-	3
17.	Diagnostic cum Therapeutic Electrical Stimulator	1	1	-	-	2
18.	Ultrasound Nebulizer	1	1	-	-	2
19.	Shortwave Diathermy	1	1	-	-	2
20.	Ultrasonic Therapy Unit	1	1	-	-	2
21.	Cervical & Limbar Traction	1	1	-	-	2
22.	Bolsters Wedgas	2	2	2	2	8
23.	Bolsters Wedgas	2	2	2	2	8
24.	Goniometer	2	1	1	1	5
25.	Finger goniometer	2	1	1	-	4
26.	Measure Tape	2	1	1	1	5
27.	Stethoscope	2	1	-	-	3



28.	Reflex Hammer	2	1	-	-	3
29.	Tuning forks	2	2	-	-	4
30.	Monofilaments	1	1	-	-	2
31.	B.P. Apparatus	2	1	-	-	3

## 2. Occupational Therapy Section

Sr. No.	Name of the Instrument Evaluation Kit	Medical Colleges	District	CHC	PHC	Total
1.	Goniometer	2	2	-	-	4
2.	Finger goniometer	2	2	-	-	4
3.	Pinchmeter	2	2	-	-	4
4.	Measure Tape	2	2	-	-	4
5.	Stethoscope	1	1	-	-	2
6.	Monofilaments	1	1	-	-	2
6.	Reflex Hammer	2	1	-	-	3
7.	Vibration Evaluation Kit	1	1	-	-	2
8.	Sensory Evaluation	1	1	-	-	2
9.	BP Apparatus	1	1	-	-	2
10.	Hand Exercisers	2	2	-	-	2
11.	Hydraulic Dynamometer	2	2	-	-	2
12.	Pronation Supination	2	2	-	-	4
13.	Sanding blocks	1	1	-	-	2
14.	Equilibrium Board	1	1	-	-	2
15.	Sanding board	1	1	-	-	2
16.	Perceptual Test Batteries	1	1	-	-	2
17.	Developmental Screening Tests	1	1	-	-	2
18.	Form board	1	1	1	1	4
19.	Peg Board	1	1	1	1	4
20.	Therapeutic Didactic Toys	1 set	1set	1set	1set	4 sets
21.	ADL Training frames	1set	1set	1set	1set	4sets
22.	Therapeutic Clay/play dough	1set	1set	1set	1set	4sets
23.	Walkers and Crawlers	1 each	1 each	1 each	1 each	4
24.	Bolster, wedges	1 each	1 each	1 each	1 each	4
25.	CP Chairs	1	1	1	1	4
26.	Prams, Patlas, Trolley	1 each	1	1	1	4
27.	Transfer stools	1 set	1 set	1 set	1 set	4sets
28.	Floor mats	3	3	2	2	10
29.	Evaluation plinth	1	1	1	1	4
30.	Wheel chair with modifications	2	1	1	1	5
32.	Tools and equipments - metal splints	1set	1set	-	-	2 sets

33.	Materials - metal splints	1set	1set	-	-	2 sets
34.	Thermoplastic tools & equipments	1 set	1 set	-	-	2 sets
35.	Thermoplastic materials	1set	1set	-	-	2 sets

### 3. Prosthetic and Orthotic Section

Sr. No.	Name of Instrument	Medical College	District	CHC	PHC	Qty.
1.	Bench Grinder	3	2	2	1	8
2.	Jig Saw Machine	2	2	2	1	7
3.	Drilling Machine	3	2	1	1	7
4.	Electric Drill	2	2	1	1	7
5.	Wood Pecker	2	2	1	1	6
6.	Work Bench	3	2	1	1	7
7.	Leather Work Machine	2	2	1	1	6
8.	Tools for Metal	6	4	1	1	12
9.	Shoe kit	4	2	1	1	8
10.	Oven	2	2	1	1	6
11.	Vacuum Forming machine	2	1	1	1	5

Logistic support in terms of space and office equipment to be provided by the selected Medical College, District, CHC and PHC.

### 4. Audiology and Speech Therapy Section

The set up is splitted in two equipment and infrastructure required for Audiology set up and speech and language therapy set up.

Audiology set up is highly specialised set up of sound field rooms which re acoustically treated. The equipment in this set up requires minimum ambient noise, free from interference from other sound and electromagnetic fields. The list of equipment including set ups is attached.

#### List of Equipment

Sr.No.	Equipment	Medical College	District	CHC	PHC	Total
1.	Sound Field Room 20 ft. x 10 ft.	1	1	-	-	2
2.	Diagnostic Audiometer	1	1	-	-	2
3.	Portable Audiometer	1	1	1	1	4
4.	Impedance Audio	1	1	-	-	2
5.	Speech Trainer	2	2	1	1	6
6.	Otoscopes	2	1	1	1	5



7.	Tunning Fork	4	2	1	1	8
8.	Paediatric Audiograph	1	1	1	1	4
9.	Langux Master	1	1	1	1	4
10.	Tests for language Assessment	1 set each	1	1	1	4
11.	Consumable items	1	1	1	1	4

### 5. Psychological Section

Sr.No.	Equipment	Medical College	District	Total
1.	Vineland Social Maturity Scale	1	1	2
2.	Gesselle's Developmental Schedule	1	1	2
3.	Developmental Screening Test	1	1	2
4.	Goodenough Harris Drawing Test	1	1	2
5.	Wescheler's Test of Intelligence for children	1	1	2
6.	Draw - A Man Test	1	1	2
7.	Verbal Test of Intelligence - Binet - Kamat-Test-Dr.Kamat	1	1	2
8.	Bhatia's Battery of Performance Test's or Intelligence	1	1	2
9.	Collins and Drever performance test or Intelligence for hearing Impaired	1	1	2
10.	Bender Gestalt Test of Intelligence for the blind	1	1	2
11.	Peabody Picture Vocabulary Test	1	-	1
12.	Seguin Goddard form Board	1	1	2
13.	Raven's Progressive Matrices - Advanced, standard and coloured	1	1	2
14.	Indian Adaptation or CAT - Children Apperception Test - Uma Chaudhary	1	-	1
15.	Mariaque Frosting Developmental Test	1	-	1
16.	Casuit Form Board Test	1	-	1
17.	Ishihara Colour Blindness Test	1	-	1
18.	Test of Perceptual Organisation	1	1	2
19.	Achievement Motivation Test	1	-	1
20.	Finger Dexterity Test	1	1	2

21.	Tweezer Dexterity Test	1	1	2
22.	Porteus Maze Test	1	-	1
23.	Differential Aptitude Test Battery	1	-	1
24.	Scholastic Achievement Test	1	1	2
25.	General Aptitude Test	1	1	2
26.	Casuit Form Board	1	-	1
27.	16 P.F. by Cattell – Forms A,B,C,D,E	1	1	2
28.	IPAT Anxiety Scale Questionnaire	1	1	2
29.	Neuroticism Scale Questionnaire	1	-	1
30.	Inferiority Questionnaire & Insecurity Questionnaire – G.C. Pai	1	1	2
31.	Marital Adjustment Questionnaire	1	-	1
32.	Rorschach Psycho-diagnostic Plates	1	-	1
33.	Minnesortia Multiphasic Personality Inventory	1	-	1
34.	Thematic Apperception Test	1	1	2
35.	Ego Strength Scale	1	-	1
36.	Self-confidence Scale	1	-	1
37.	Ruchi-Parisuchi Interest Inventory – Kulshrestha	1	1	2
38.	Asthama Adjustment Inventory	1	-	1
39.	Student Problems Inventory – M.D. Badami	1	1	2
40.	Kundu Introversion – Extroversion – Inventory	1	1	2
41.	School Adjustment Inventory	1	1	2
42.	Motivational Analysis Scale	1	1	2
43.	Luria Nebraska Neuropsychological Test	1	-	1
44.	Minnesota Test for Differential Diagnosis of Aphasia	1	-	1

#### List of other Materials

Sr.No.	Description	Medical College	District	Total
1.	Stopwatch	2	2	4
2.	Printed Booklet on facilities and concessions	1	1	2
3.	Monographs on various occupations	1 set	1 set	2 sets



4.	List of schools for children with Mental Deficiency published by NIMH	1 set	1 set	2 sets
5.	Mannual for parents, teachers and counselors/psychologists - NIMH	1 set	1 set	2 sets

**List of Equipments and other Materials for Upgradation of Model PMR Departments**

Isokinetic System  
 CPM  
 Reconstructive Surgery Sets  
 O.T.Table  
 O.T.Lights  
 Anaesthetic Trolley  
 Ward equipments & Furniture for 40 beds  
 Drugs & Linen  
 Plaster room equipment  
 LCD Projector  
 Computer  
 Laser Printer  
 Video Camera  
 Materials(carbon fibre etc)  
 Gym for SCI (Harness etc.)  
 Portable Ultrasonography  
 Voc.training equipments(SCI)  
 Oven  
 Suction machine  
 Gait & Motion analysis System  
 Clinic Furniture  
 Teaching aids & Books  
 8 Seater Four wheeler Tata Sumo  
 Router machine  
 Suction Machine for plastic Moulding  
 Electric furnace  
 Foot Pressure Scanner  
 Digital Camera  
 Equipment for Rural Rehab.services  
 LASAR  
 Treadmill  
 Defibrillator  
 ECG Machine  
 Cycle Ergometer & Other fitness equipments  
 Emergency Cardiac Trolley  
 CBR Manuals

## **Assessment Of The Magnitude Of Disability Due To Non-Communicable Disorders And Estimation Of Requirement Of Medical Rehabilitation Services**

The most work on disability and impairment assessment have been too general, measuring only prevalence in the population and do not identify causes of disability and do not take into account morbidity and chronic disorders. Therefore such assessments are of limited value from the point of planning and monitoring health interventions in terms of primary and secondary preventions. This lack of data needs to be addressed to for the purpose of effective formulation of programmes and interventions. There is also need for longitudinal studies of representative communities all over the country which can act as guide for policy making.

In the current Xth Five Year Plan, ICMR had already taken up studies of causes of disability for India, the results of which are awaited.

In the current Five Year Plan more research studies need to be undertaken. ICMR to continue the research study co-opting apex institutes like AIIPMR, JIPMER, etc for mutli-centric studies.

### **Research Priorities**

1. Surveillance of the incidence and prevalence of various disability caused by non-communicable disorders
2. To estimate the Disability Adjusted Life Years/Quality Adjusted Life Years of the chronic Non-communicable Diseases causing disability.
3. To assess Quality of Life of the persons with Disability due to Non-communicable Diseases.
4. To estimate the morbidity and disabilities in the elderly population.
5. To estimate the quantum of need-based medical rehabilitation services
6. Based on above data, plan service delivery and training manpower for prevention of disability at primary, secondary and tertiary level for implementation by states.



## NATIONAL TRAUMA CARE PROGRAMME

Road Traffic Injuries are major but neglected global health problem, more so, in developing countries like India where they result in over one lakh deaths every year, requiring concerted efforts for effective and sustainable prevention and management. What is worse, without increased efforts the total number of road traffic deaths and injuries are bound to rise by about 65% between 2002 to 2020 with deaths are expected to rise by as much as 80%. There are two millions hospitalization and 7.7 millions minor injuries and an estimated economic loss of Rs. 55,000 crores or nearly 3% of GDP every year. If the present scenario continues, India will witness death of 150,000 persons and hospitalization of 2.8 million people by 2010, increasing further to 185,000 deaths and 3.6 million hospitalizations by 2015.

For every death due to injury, nearly 10-20 victims are hospitalized, 50-100 receive emergency care in hospitals and 100 victims sustain minor injuries. Nearly 100% severe, 50-70% moderate and 10-20% mildly injured persons need short-term and long-term rehabilitation services. Apart from this, the incidence of mild traumatic brain injury (TBI) is ten times that of severe brain injury. TBI may lead to disabling cognitive deficits requiring long terms rehabilitation. More than 75% of the road traffic casualties are amongst the economically productive young adults. Road traffic accidents not only place a heavy burden on the National Economy but also on households.

Injury victims must reach definitive care centres within a short period of time to prevent death or disability. Considering the magnitude of the problem, there is a strong need to develop and implement an urgent and comprehensive trauma care system covering the entire nation with statewide emergency medical service (EMS) and trauma care system, designated trauma facilities, and a trauma registry. This programme should consist of (i) Pre-hospital Trauma Care, (ii) Hospital Care, (iii) Rehabilitation of the injured, and (iv) Injury Prevention.

**(1) Pre-hospital Care:** At the time of accident, everyone expects access to the best available health care. For the victims of multi-system trauma, prompt first-aid, immediate communication and transfer to a trauma care centre is required for definitive treatment and rehabilitation. To achieve the above goals, we must have-

**(1) Communication** with a toll free common medical emergency number for the entire country, connected to the local network. It will connect to the local control room which will direct the nearest Ambulance to reach the accident site and at the same time will alarm the nearest trauma centre for the preparation to receive the trauma victim. Telephone booth connected to local network should be available at a distance of every 2 kms on the highways. This can be coordinated by Ministry of Telecommunication through public private partnership. Two-way communication between Ambulance and Trauma facility and between Trauma facilities will facilitate telemedicine capable of lossless transmission of radiology and



teleconsultation, and avert unnecessary shuttling of patient and help in decongesting Level I Centre.

- i) Ambulances, each manned by two persons both trained as driver as well as paramedic and fully equipped with extrication, first-aid and resuscitation equipments, and a two-way wireless communication system, stationed atleast at every 50 kms so as to reach the site of accident as quickly as possible.
- ii) Triage, applied at the site of accident, during transport and at the trauma facility, will facilitate the paramedics to identify the nature and severity of injury and communicate with the appropriate trauma centre.
- iii) Public Awareness & Implementation : Use of mass media to educate the public to recognize trauma and other emergency medical situations, to call for help and learn how to provide first-aid, compulsory first-aid training to the school children and police personnel, mandating issue of driving licence only after stipulated practical hands-on first-aid training, ensuring priority passage for ambulance in traffic
- iv) Golden hours: Diagnosis and prompt transport of patients with extensive injuries during the "Golden Period" to an appropriate centre for definitive care and intervention can save their lives.
- v) Registry of personal and injury details of all patients attended by the paramedics and sending these same day online to the National Trauma Data Bank.

(2) **Hospital Care:** Evidence of the effectiveness of specialized trauma care facilities is seen from the fact that care at level I trauma centre to save lives and improve survival by as much as 25 percent. American College of Surgeons committee on trauma has suggested three levels of trauma centre designations: Tertiary (Level I, Highest level of care), Secondary (Level II), and Primary (Level III)

**Tertiary (Level I) Trauma Facilities:** shall have as part of the hospital at tertiary level of medical care centres/medical colleges at least the following clinical services:

- a. Director of Trauma Services assisted by a statistician, record clerk (computer literate) and a vehicle.
- b. General surgery, Emergency, Anesthesia, and Neurosurgery services

This trauma facility shall have at least the following hospital **resources on-call** for prompt availability within 15 minutes: Cardiac surgery; Cardiology; Hand surgery; Hematology; Infectious disease; Internal medicine; Microvascular surgery;



Obstetrical/ Gynecological surgery; Ophthalmic surgery; Oral/Maxillofacial; Organ procurement; Otorhinolaryngology; Orthopedic surgery; Pediatrics; Pediatric surgery; Plastic surgery; Pulmonary medicine; Radiology; Thoracic surgery; and Urologic surgery.

**Emergency department** with at least a physician skilled in trauma care; and 2 registered nurses trained in the care of the trauma patient and equipment available 24 hours a day. It shall be equipped with airway control and ventilation equipment, 6-8 channel monitor, End-tidal carbon dioxide monitoring equipment, Suction devices, Electrocardiographic oscilloscope-defibrillator-pacer, Central venous monitoring capability, Standard intravenous fluids and administration devices, including large bore intravenous catheters, Sterile surgical sets for airway control and cricothyrotomy, vascular access, thoracotomy, chest decompression, and intracranial pressure monitoring equipment, Gastric lavage and decompression, Drugs necessary for emergency care, X-ray capability, Two-way communication with emergency transport vehicles, Skeletal traction devices including cervical immobilization device, Arterial catheters, and Thermal control equipment for patients and infusion of blood products.

At least one **dedicated Trauma Operating suite** available twenty-four (24) hours a day staffed by a Technician, a Circulating nurse and an Anesthetist and equipped with Cell saver equipment, Operating microscope, Thermal control equipment for patients and infusion of blood products, X-ray including C-arm capability, Endoscope, Craniotomy instruments, and Equipment for the fixation of long-bone and pelvic fractures. An on-call back-up staff schedule shall be maintained.

**Recovery room** A post anesthesia recovery room or a surgical intensive care unit with at least registered nursing service and anesthesia services remaining in the unit until the patient is discharged from the unit, and equipped with the following equipment at the minimum: Equipment for continuous monitoring of temperature, hemodynamics, and gas exchange and of intracranial pressure, Pulse oximetry, End-tidal carbon dioxide monitoring equipment, and Thermal control equipment for patients and infusion of blood products.

**Intensive care unit** staffed by a physician on duty in the facility or immediately available 24 hours a day; and Registered nurse on duty 24 hours a day, with a nurse to patient ratio of 1:1 or 1:2. The minimum equipment requirement included equipment for the continuous monitoring of temperature, hemodynamics, and gas exchange, minimum advanced life support resuscitation equipment, and Fowler's bed with anti-decubitus mattresses.

**Support services** available twenty four (24) hours a day include Respiratory therapy which may be provided through nursing services/physiotherapists; X-ray service, Clinical laboratory services, Acute hemodialysis capability, and Social services, which will be provided by voluntary organizations.



**Burn care** in a physician directed burn facility staffed by nursing personnel trained in burn care and equipped to care for the severe burn patient, or a written transfer agreement with a facility capable of providing such services.

**Spinal cord and head injury services** This acute spinal cord and head injury management capability including at least the ability to initiate rehabilitative care prior to transfer, and a written transfer agreement with a comprehensive rehabilitation facility if such services are not available within the facility.

### **Radiology**

This trauma facility shall have radiology service with an in-house radiology technician twenty-four (24) hours a day and radiological special capabilities including at least Angiography; Sonography; Nuclear scanning; Computed tomography - multislice; Magnetic resonance imaging minimum of 1.5 Tesla. A computed tomography (CT) technician shall be promptly available.

**Rehabilitation service** staffed by trained personnel and equipped to provide acute, sub-acute and specified rehabilitation services.

### **Clinical laboratory service**

This trauma facility shall have clinical laboratory service twenty-four (24) hours a day providing at least Standard analysis of blood, urine, and other body fluids; Blood typing and cross-matching; Coagulation studies; Blood bank; Blood gases and Ph determinations; Microbiology; and Drug and alcohol screening.

### **Quality improvement**

This trauma facility shall have a quality improvement programme which includes at least Quality improvement process; Trauma registry; Audit filters; Special audit for all trauma deaths; Morbidity and mortality review; Medical nursing audit, utilization review, tissue review; Review of pre-hospital trauma care; Published on-call schedules for surgeons, neurosurgeons, and orthopedic surgeons; Documentation and review of times and reasons for trauma-related bypass; and Quality improvement staff with transportation time.

### **Prevention & education programs**

The facility shall maintain a comprehensive dataset of the trauma registry; it shall have a prevention & public education programme, including a designated prevention coordinator who may be the Trauma Coordinator; Outreach activities and programs; Public information resources; and Collaboration with existing national, regional, and state programs. IEC interaction on promotion of Trauma First Aid and Follow Up Programmes.



## **Continuing education**

The trauma facility shall have a formalized continuing education for staff physicians, nurses, and allied health professionals. BTLS training should be part of the mandatory training programme for all medical students and non-medical personnel, i.e., nurses, technicians and paramedics. ATLS training should be given to the selected people.

## **Transfer capacity**

This trauma facility shall have transfer capacity through written agreements with other providers as a receiving facility and transferring facility, as appropriate; and a helipad.

**Research programme** along with other research activities.

## **Secondary (Level II) Trauma facilities :**

The district hospitals will be required to function as Secondary trauma facility in phased manner. The hospitals, which meet the criteria for secondary facility except those described below, shall be recognized as Secondary trauma facility.

- Phase I        The district hospitals near golden quadrangle highways.
- Phase II       The district hospitals close to national highways.
- Phase III      All other district hospitals.

## **Exceptions**

**Clinical services.** This trauma facility shall not be required to have the following services on call and promptly available: hand surgery; hematology; infectious disease; microvascular surgery; and pediatric surgery. The facility shall have an infectious disease specialist available for immediate consultation via direct real-time communication.

**Anesthesia services.** A certified registered nurse anesthetist may be used.  
**Research programme.** Secondary trauma facility shall not be required to have a research programme.

## **Primary (Level III) Trauma facilities**

Sub-Divisional Hospital / Community Health Centres will be required to function as Primary Trauma facilities. Such Centres will meet the following criteria.

## **Clinical services**

Primary trauma facility shall have at least General surgery; Emergency services, with a designated physician director; and Anesthesia. It shall have at least anesthesia and general surgery capabilities on-call and promptly available. It shall have access to the clinical resources of all secondary and tertiary centres available for immediate consultation via direct tele-networking: Cardiology; Infectious disease; Internal medicine; Neurological surgery; Obstetrical/Gynecological surgery; Ophthalmic surgery; Oral/ Maxillofacial; Otorhinolaryngology; Orthopedic surgery; Pediatrics; Pulmonary medicine; Radiology; Thoracic surgery; and Urologic surgery.

## **Emergency department**

- a. Primary trauma facility shall have a hospital emergency department with staff and equipment available twenty-four (24) hours a day.
- b. Primary trauma facility shall have at least the following staff:
  1. A physician who is deemed competent in the care of the trauma patient.
  2. Nursing personnel trained in the care of the trauma patient from hospital arrival until disposition to the intensive care unit, operating room, or patient care unit.
- c. Primary trauma facility shall have at least the following resources:

Airway control and ventilation equipment including laryngoscopes and endotracheal tubes of all sizes, bag-mask resuscitator, pocket masks and oxygen;  
Pulse oximetry;

End-tidal carbon dioxide monitoring equipment;

Suction devices;

Electrocardiographic oscilloscope-defibrillator-pacer;

Central venous monitoring capability;

Standard intravenous fluids and administration devices, including large bore intravenous catheters;

Sterile surgical sets for airway control and cricothyrotomy, vascular access, thoracotomy and chest decompression;

Gastric lavage and decompression;

Drugs necessary for emergency care;

X-ray capability;

Two-way communication with emergency transport vehicles;

Skeletal traction devices including cervical immobilization device; and

Thermal control equipment for patients and infusion of blood products.

**Operating suite** with thermal control equipment for patients and infusion of blood products available 24 hours a day.

**Recovery room:** A post-anesthesia recovery room or surgical Intensive Care Unit, with at least equipment for continuous monitoring of temperature, hemodynamics.



and gas exchange; Pulse oximetry; End-tidal carbon dioxide monitoring; and Thermal control equipment for patients and infusion of blood products. **Intensive care unit** with at least a registered nurse on duty whenever the intensive care unit is open, and at least on call and immediately available when the unit is closed with a nurse to patient ratio of 1:1 or 1:2 when open, and at least equipment for minimum advanced life support resuscitation, and the continuous monitoring of temperature, hemodynamics, and gas exchange.

**Support services** X-ray availability 24 hours a day and social services.

**Burn care** with a burn unit, or a written transfer agreement with a physician directed burn centre.

**Spinal cord and head injury services** or a written transfer agreement with an acute spinal cord or head injury centre.

**Radiology** including computed tomography (CT) and CT technician(s) available 24-hours a day; with response times monitored through the quality improvement process.

**Rehabilitation service** or a written transfer agreement with a rehabilitation facility. **Clinical Laboratory** Primary trauma facility shall have clinical laboratory service twenty-four (24) hours a day, for standard analysis of blood, urine, and other body fluids.

**Quality improvement** Online trauma registry and filling & maintaining the medico-legal reports of the patients.

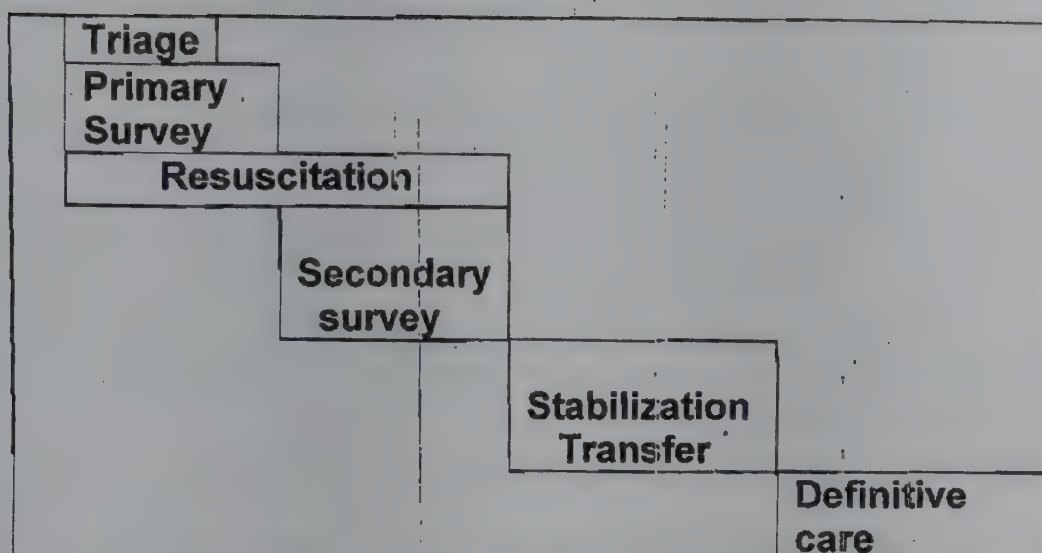
**Prevention and education programmes** which shall maintain the minimum data set of the trauma registry and collaborate with existing national, regional, and state programs.

**Transfer capacity** Primary trauma facility shall have written transfer agreements with other providers as a transferring facility; and may have a helipad.

### **Protocols for management of trauma patients**

All the trauma facilities should be equipped to observe the following protocols.

- i) Primary Trauma Care (PTC) : All Centres dealing with trauma care should be in a state of preparedness and alert to receive such victims. The successful management of severe trauma depends on following six steps shown in the figure:-



Start resuscitation at the same time as making the primary survey. Do not start the secondary survey until you have completed the primary survey. Do not start definitive treatment until secondary survey is complete.

**Triage:** Triage means sorting and treating patients according to priority, which is usually determined by Medical need, Personnel and Resources availability.

**Primary Survey:** Make a full primary or secondary survey of the patient especially patients who have:

- History of :
  - A fall > 3 metres
  - Road traffic accident: net speed > 30 km/hour
  - Thrown from a vehicle or trapped in a vehicle
  - Pedestrian or cyclist hit by a car
  - Unrestrained occupant of a vehicle
  - Death of a person in the same accident or from assault
  - Injury from high or low velocity weapon
- And/or on examination:
  - Airway or respiratory distress
  - Blood pressure < 100 mmHg
  - Glasgow Coma Scale < 13/15
  - > 1 area injured.

ABCDE is the first survey of Trauma victims.

**A is for Airway** – potency of the airway should be maintained.

**B is for Breathing** – If needed breathing should be assisted by artificial ventilation.



**C is for Circulation** – Common reasons for inadequate circulation include blood loss (Shock) and increase pressure on the heart from pneumothorax or haemopericardium. Low blood pressure is dangerous especially for head injury patients as the blood supply to the brain will be further reduced.

**D is for Disability & Neurological Damage** – initial clinical examination is done within 30 seconds and is vital part for primary survey.

**E is for Exposure** – patient should be fully exposed for proper examination.

Any life threatening problems, such as bleeding, pneumothorax or obstructed airway should be immediately resolved during primary survey.

**Resuscitation** by emergency physicians/anesthetists.

**Secondary Survey** includes X-ray examination. After secondary survey, details of the patient should be done.

**Stabilization & Transfer:** At this stage the management plan should be clear and patient should be transferred to the Ward for conservative treatment or to the Operation Room or to the Other Hospital for definitive care. Before transferring the patient to the other hospital, the referral Centre should be contacted to ensure that they can help and a trained person will accompany the patient.

**Definitive Care:** The definitive surgical procedures will be undertaken by the respective Specialists as mentioned above.

**Rehabilitation:** After recovery from the injury, the patient will be rehabilitated at these Centres as mentioned above.

**Trauma Training:** Continuing education training in trauma care for healthcare providers is an important component of effective and viable Trauma care.

Advanced Trauma Life Support (ATLS) Courses should be offered periodically throughout the year in Anchorage at the Tertiary (Level I) Trauma Centre.

Basic Trauma Life Support (BTLS) Courses are offered periodically through the Secondary (Level II) Trauma Centre.

Trauma Nursing Course and Emergency Nursing Course should also carry out regularly at Tertiary (Level I) Trauma Centre.

Trauma care continuing medical education training should be available at the State and Regional Trauma Centres.

**Budgetary Requirements for Equipments**  
**Primary trauma facility**

S.No.	Name of Equipment	Approx. Price (Rs)
1.	Image Intensifier (C-Arm) – With CD Rom, Printer, 12" CCD, Single Monitor, Facilities for Electronic Transmission and Networking for Tele-Radiology	20 Lacs
2.	Ultrasonography – Trolley based	5 Lacs
3.	O.T. Table – 3 segments, translucent top with orthopedics attachment	10 Lacs
4.	Cautery Machine – Monopolar	2 Lacs
5.	O.T. ceiling light	2 Lacs
6.	Suction Machine	50,000
7.	Anesthesia Machine with Monitor	5 Lacs
8.	Portable ventilator	2 Lacs
9.	Pneumatic tourniquet	50,000
10.	General surgical instruments	1 Lac
11.	I.V. Fluids and Drugs (recurring expenditure)	10,000
12.	E.C.G. Machine	50,000
13.	Beds with I.V. Stands with head raising – 5 Nos.	1 Lac
14.	Patient Trolleys on 6" wheels – 2 Nos.	20,000
15.	Splints and traction	10,000
16.	Lab. Microscope	50,000
17.	Electricity Back-up	50,000

**Approx. 50 Lakhs Per Centre**

**Secondary Trauma Facility**

S.No.	Name of Equipment	Approx. Price (Rs)
1.	Image Intensifier (C-Arm) – With CD Rom, Printer, 12" CCD, Double Monitor, Facilities for Electronic Transmission and Networking for Tele-Radiology with X-ray and DSA facilities.	35 Lacs
2.	3 D Ultrasonography – Trolley based	7 Lacs
3.	500 mA X-ray Machine with Dark Room facility	10 Lacs
4.	CT Scan Multi Slice	100 Lacs
5.	100 mA Portable X-ray Machine	1 Lac



6.	O.T. Table – 4 segments, translucent top with orthopedics attachment	12 Lacs
7.	Cautery Machine – Mono & Bi Polar	5 Lacs
8.	O.T. ceiling light – shadow less	3 Lacs
9.	High Vacuum Suction Machine	1 Lac
10.	Anesthesia Machine with Monitor 6-8 Channel	10 Lacs
11.	Standard ventilator	5 Lacs
12.	Pneumatic tourniquet	50,000
13.	General surgical instruments	1 Lac
14.	Thoracotomy instrument	1 Lac
15.	Spinal surgery instrument	5 Lacs
16.	Power drill and Power saw	6 Lacs
17.	Craniotomy instrument	5 Lacs
18.	E.C.G. Machine	50,000
19.	Splints and traction	10,000
20.	Lab. Automatic Blood Gas Analyser	5 Lacs
21.	Automatic Bio-Analyser	5 Lacs
22.	Patient warming system	50,000
23.	Defibrillator	1 Lac
24.	Operating Microscope	2 Lacs
25.	Operating Head Lights	1 Lac
26.	5 beds fully equipped ICU – Monitor, Ventilator (6 channel), Fowler's bed	30 Lacs
27.	10 bedded step down / recovery unit with 5 monitors (4 channels)	10 Lacs
28.	Rehabilitation – SW Diathermy, IFT machine, Cervical and Lumbar Traction and Physiotherapy equipments	10 Lacs
29.	Blood Bank and Microbiology facility	
30.	Electricity Back-up	50,000

**Approx. Rs. 2.75 crores Per Centre**

### Tertiary Trauma Facility

S.No.	Name of Equipment	Approx. Price (Rs)
1.	Image Intensifier (C-Arm) – With CD Rom, Printer, 12" CCD, Double Monitor, Facilities for Electronic Transmission and Networking for Tele-Radiology with X-ray and DSA facilities for O.T.	35 Lacs
2.	4 D Ultrasonography – Trolley based	8 Lacs
3.	1000 mA digital X-ray Machine with dry processor	40 Lacs
4.	CT Scan more than 16 Slices	150 Lacs
5.	1.5 Tesla MRI	500 Lacs
6.	Angiography C-Arm based + - angiosuite	1000 Lacs
7.	100 mA Portable X-ray Machine	1 Lac
8.	O.T. Table – 4 segments, translucent top with orthopedics attachment	12 Lacs
9.	Cautery Machine – Mono & Bi Polar with underwater cutting	7 Lacs
10.	O.T. ceiling light – shadow less with inbuilt camera and monitor	5 Lacs
11.	High Vacuum Suction Machine	1 Lac
12.	Anesthesia Machine with Monitor 6-8 Channel	10 Lacs
13.	Standard ventilator	5 Lacs
14.	Pneumatic tourniquet	50,000
15.	General surgical instruments	1 Lac
16.	Thoracotomy instrument	1 Lac
17.	Spinal surgery instrument	5 Lacs
18.	Faciomaxillary instrument	1 Lac
19.	Power drill and Power saw	6 Lacs
20.	Craniotomy instrument	5 Lacs
21.	E.C.G. Machine	50,000
22.	Splints and traction	10,000
23.	Lab. Automatic Blood Gas Analyser	5 Lacs
24.	Automatic Bio-Analyser	5 Lacs
25.	Patient warming system	50,000
26.	Defibrillator	1 Lac
27.	Operating Microscope	2 Lacs



28.	Operating Head Lights	1 Lac
29.	5 beds fully equipped ICU – Monitor, Ventilator (6 channel), Fowler's bed	30 Lacs
30.	10 bedded step down / recovery unit with 5 monitors (4 channels)	10 Lacs
31.	Rehabilitation – SW Diathermy, IFT machine, Cervical and Lumbar Traction and Physiotherapy equipments	10 Lacs
32.	Blood Bank and Microbiology facility	
33.	Electricity Back-up	50,000

**Approx. Rs. 18 crores Per Centre**

~~The year wise estimated budget could not be reflected as the same was not received.~~

The experts from Central Govt. hospitals from the Deptt. of Neuro Surgery, Orthopaedics, Anaesthesia, Surgery nominated by Dte. G.H.S., visited and evaluated the health care facilities available in the designated hospitals situated on the Golden Quadrilateral in Kolkata – Chennai and Chennai – Mumbai sector [approximately 3000 kms].

Based on the reports submitted by the experts pertaining to 34 hospitals visited, the requirements of the funds to strengthen those for level 1, level 2 and level 3 are worked out to be Rs.97.45 crores.

It is proposed in the Eleventh Plan Outlay, 300 such hospitals to provide trauma care facilities across the country of which 140 hospitals are covered under Golden Quadrilateral and NSEW corridors. Rest 160 institutions may be selected on the following criteria:

National/ State Highways [other than GQ & NSEW corridor] with substantial number of accidents and:

- connect two capital cities
- connect major cities other than capital cities
- connect ports to major cities
- connect industrial townships with capital cities

Preliminary study of the institutions falling under remaining sector of the Golden Quadrilateral ( Mumbai- Delhi and Delhi-Kolkata Sectors ) and the N-S-E-W corridors, the per cent of Level 1, Level 2 and Level 3 institutions are as under:

(n=106)

Category)	No of Institutions	Percentage
Level 1	22	21%
Level 2	36	34%
Level 3	48	45%

Extrapolating this percentage to the remaining 160 hospitals, the cost for the un-inspected 266 hospitals [160 (outside the Golden Quadrilateral & NSEW) + 106 (remaining hospitals situated on Golden Quadrilateral and NSEW)] to be covered under the XI plan, the fund requirement works out to be Rs. 932.83 crores. The basis for which, the cost projected is as under:

(n= 266)

Category)	Percentage	No. of hospitals	Unit Cost*	Total Cost
Level 1	20%	53	5.00	265.00
Level 2	35%	93	3.31	307.83
Level 3	45%	120	3.00	360.00
Total ( in Crores)				932.83

\* Cost based on both manpower and material resource components

The cost worked for the 300 institutions ( 266 hospitals on the above arrived at unit cost) and the 34 inspected institutions works out to be **Rs. 1030.28 crores.**

The phasing for strengthening of no. of the hospitals vis-à-vis the costs for the 11<sup>th</sup> plan would be as under:

	2007-08	2008-09	2009-10	2010-11	2011-12
No. of Instt.	34	30	76	80	80
Cost (Rs. in crores)	97.45	106.41	265.06	280.68	280.68





## OPERATIONAL RESEARCH IN COMMUNICABLE & NON-COMMUNICABLE DISEASES

### COMMUNICABLE DISEASES

#### Overview

India, over the past few decades has made rapid stride in the improvements of health status of the people and in bringing down the morbidity and mortality due to communicable diseases. Few diseases have been eradicated (small pox, guinea worm disease). The National Health Policy – 2002 has set targets to eradicate polio and yaws (2005), eliminate leprosy (2005), eliminate Kala-Azar (2010), achieve zero level growth of HIV/AIDS (2007), reduce mortality by 50 per cent on account of tuberculosis, malaria and other vector and water borne diseases (2010), reduce prevalence of blindness to 0.5 per cent (2010), reduce IMR to 30 per 1000 live births and MMR to 100 per one lakh (2010), increase utilization of public health facilities from current level of less than 20 to more than 75 per cent (2010) and establish an integrated system of surveillance (2005). This puts a formidable challenge for all the Health Program Managers. In spite of remarkable achievements, the problems still persist in the health system and there are wide differential in health status among socio-economic groups. In addition the country is passing through a demographic and epidemiological transition and facing the threat of emerging and re-emerging communicable diseases and a rising trend in the chronic non-communicable diseases and lifestyle diseases. The National Rural health Mission (NRHM), launched on 12 April 2005 by Hon'ble Prime Minister has the main aim to provide accessible, affordable, accountable, effective and reliable primary health care facilities especially to the poor and vulnerable sections of the population. The NRHM further aims to provide overarching umbrella to the existing programs of Health & Family Welfare including RCH – II and diseases control programs both communicable and non-communicable diseases. The outcomes of NRHM pertaining to malaria, kala-azar, filarial, dengue, Japanese Encephalitis, leprosy, tuberculosis and cataract operations etc. have also been set to be achieved by 2012. The integration of these programs with the primary health care system, inter-sectoral coordination and public private partnership in the programs have thrown open wide area for Operational Research.

Operational Research is a scientific approach to the solutions of the problems in the management of complex systems. It is a professional discipline that deals with the applications of information technology for informed decision making. By using analytical methods, operational research helps in problem solving and decision making that is useful in the management of organizations. The goal of Operational Research is to provide rational basis for decision making by seeking to understand and structure complex situations and utilize this understanding to improve system behaviour and system performance.



Health care delivery system is no less complex, Operational Research has an important role in solving health problems and helping in decision making. In the health sector, OR is concerned with day to day operations of programs. It is intended to provide the information for improving service delivery activities and plan for better future service. It seeks practicable solutions to problem situations. Several program areas common to both communicable and non-communicable disease control programs need to be addressed through Operational Research are as follows:

### **General Recommendations on Operation Research**

- Improving diagnosis and treatment delivery and development of new tools for the diagnosis and treatment.
- Integrating disease control programs within primary health care system
- Ensuring equitable access of health services to all populations sub-groups especially women, the poor and the marginalized population (SC/ST).
- Addressing new interventions and identifying better ways to implement and monitor current interventions
- Development of information and communication systems for program oversight and surveillance.
- Greater attention to areas with under developed infrastructure
- Realistic assessment of the cost effectiveness of various interventions and their impact on health, social and economic developments.
- Newer and more effective approaches suited to local circumstances
- Forecasting of prevalence to incidence of disease over planned period and prediction of epidemics using epidemiological and mathematical statistical models.
- To develop programme evaluation methodologies for national health programmes and to undertake feasibility studies for the new methodologies so developed.

### **Health Economic Related operational research Research**

- Cost effective analysis of different programme for priority between different diseases.
- Cost effectiveness analysis of different treatment regimen for prevention and treatment of diseases.

### **Laboratory Related operational research**

- Quality of lab. Diagnosis: lab related factors; periodic training; adequacy of reagents, kits, good microscope.
- Delayed diagnosis: community factors, surveillance factors & lab. Factors.
- How to upgrade drug delivery system: surveillance mechanisms?
- Reasons poor drug compliance rate: community factors, social educational, ethnic, cultural?

**Operational research activities planned for the 11<sup>th</sup> five year plan in areas of communicable diseases.**

## **1. Tuberculosis**

### **Overview**

Regarding Operational Aspects, nearly the entire country is covered by DOTS through the RNTCP. Further, DOTS-Plus (i.e. treatment of drug-resistant cases of TB) has been launched as a pilot project by the DGHS during 2006 in two states of the country, Gujarat and Maharashtra. It is planned to expand this programme in a phased manner to 26 sites by 2010. Studies should give priority to the development of techniques for the early identification of drug-resistance.

Current tools used in the control programme would be refined by identifying and removing road blocks to their effective implementation. Studies will assess the current performance of these tools and suggest ways of improving their usage and also provide quality assurance for the programme. Studies are planned to effectively disseminate the results of operational research.

### **Operation Research Aspects**

- Operational research studies in the areas aiming at decreasing delays in diagnosis and including proper selection of DOTS-provider in different situations as well as drug-delivery in different geographical areas and dissemination of research findings.
- Issues concerning the implementation of DOTS-Plus in the country in a phased manner (e.g. logistics of culture and drug-delivery).
- Impact studies on the implementation of DOTS and DOTS-Plus.
- Research would be needed to study prophylactic treatment of contacts in MDR cases.
- Operational studies to study daily regimens for Multi-Drug Resistant TB (MDR-TB) cases.
- Studies to evaluate regimes for HIV-TB cases.



- Molecular epidemiology studies to evaluate the epidemiological impact of DOTS in relation to the transmission dynamics of infection in the community.
- Quality Control Assurance for the RNTCP:
- Development of a network of laboratories and referral system for maintaining the quality assurance of sputum microscopy and culture.
- Tools for assessing the quality-assurance methods.
- To define and evaluate the tools for quality assurance and testing of smear-microscopy under the national TB control programme.
- Improvisation of proper training modules for implementation of DOTS-Plus and DOTS-specific issues
- Exploring ways of promoting public-private partnerships for tuberculosis control will be the focus of newer studies to be initiated
- Planning for the future –TB control (Maximizing efficiency of RNTCP)
- Studies on Extra pulmonary TB
- Methods of integration of HIV and TB control programs
- Operational research to determine factors that impact on TB treatment completion and cure rates and best practices for delivering treatment

## 2. Leprosy

### Overview

During the last 2 decades, there has been a tremendous decline in the prevalence of leprosy in India. At the national level, this has been declared as an eliminated disease. However, there are still several pockets of high endemicity and in some areas the New Case Detection Rate (NCDR) is still high though declining is still quite high in several parts of the country. Further the National Leprosy Eradication Programme (NLEP) has been integrated with the general public health services. The advantages of this integration is that leprosy diagnostic and treatment services will be available every day at the Primary Health Centres unlike previously when it was on fixed days. As such, simple methods of diagnosis especially to detect early forms of the disease and user-friendly regimes are required in the long run. A good example is the concept of Uniform Multi-Drug Treatment (U-MDT) wherein any case of leprosy, be it paucibacillary or multibacillary, is treated with the same type of leprosy regimen and this is being further tested by ICMR's National JALMA Institute of Leprosy and Other Mycobacterial Diseases at Agra.

### Operation Research Aspects

- Field studies to understand the impact of MDT and transmission dynamics in selected areas.

- To assess the impact of existing training modules to train the doctors, pathologists and other staff in the use of relevant training, if not appropriate modified the same and assess again the impact of modified modules.
- To Study the programme impact on the incidence / prevalence and profile of the disease.
- Developing surveillance strategies for Leprosy and documenting Leprosy Elimination efforts for future planning

### 3. DIARRHOEAL DISEASES

#### Overview

Diarrhoeal diseases are important causes of morbidity and mortality in India. On an average a child suffers three episodes of diarrhea per year. Besides this, diarrhea also plays a vital role to the problem of under nutrition in infants. As the majority of childhood diarrheas are caused by *V. cholera*, *shigella*, *rotavirus* and *enterotoxigenic Escherichia coli* (*E. coli*) which have a high morbidity and mortality, vaccines against these organisms are essential for control of epidemics. India is a signatory to the Millennium Development Goals (MDGs) to reduce the child mortality. Approximately 3.1% of deaths (1.7 million) and 3.7% of DALY's (54.2) million, worldwide are attributable to unsafe water, sanitation and hygiene. Overall 99.8% of deaths associated with risk factors are in developing countries. Further emphasis needs to be given to strengthen research on *Vibrio cholera*, *Vibrio parahaemolyticus*, *Shigella*, *Salmonella* and diarrhoeagenic *Escherichia coli* *Campylobacter jejuni* and *Clostridium welchii*

#### Operation Research Aspects

The common water-borne communicable diseases e.g. gastroenteritis, cholera and specific types of hepatitis are still contributing to substantial disease burden in the country, despite a reported decline in mortality from these diseases over the past decades.

- Vaccine preventable disease trials have been planned which relate mostly to diarrhoea and other enteric diseases including Hep. A, E and Typhoid.
- Water borne Hepatitis Infections: Implications and Preventive Strategies for Chronic Liver Diseases and Liver Failure.
- Surveillance of epidemiological shifts in water borne hepatitis infection.
- Under NRHM water, sanitation, nutrition, education and health converge and integrated at the grass root level. Study needs to be undertaken to assess its Operational impact on incidence and management of diarrhoea.

A mass scale cholera vaccine demonstration trial is to be undertaken with oral whole cell killed bivalent cholera vaccine. A phase IIIb trial of oral live



attenuated human rotavirus vaccine for prevention of rotavirus diarrhoea, is proposed to be given to infants along with their primary immunization.

- For water quality monitoring a separate department needs to be established which will solely be engaged for drinking water quality maintaining and maintain the liaison with the state health authorities.
- In addition, continuous surveillance and monitoring for several diarrhoeal pathogens to provide timely warning for occurrences of outbreaks or drug resistance, and emergence of new organism types is also an important activity.
- Preparation of Egg Yolk Antibodies against Rotaviruses for Passive Immunization of Human and Poultry.
- Studies for making water potable.

#### **4. VECTOR BORNE DISEASES**

##### **Operation Research Aspects**

- Natural disaster related risk assessment of VBDs to assess the risk of VBDs under such situations and predicts the possible risks and remedies.
- Development of protocols for early warning system which could offer cost-effective measures of preventing the outbreaks is essential
- Health Information System for VBDs to monitor the programme effectiveness and initiate appropriate and timely remedial measures
- Field evaluation of a flowable formulation of *Pseudomonas fluorescence* against *Aedes aegypti*, *Culex quinquefasciatus* and *Culex tritaeniorhynchus*
- Taxonomic validation of sibling species under the *Anopheles culicifacies* complex, in accordance with the international code of zoological nomenclature.

#### **5. Leishmaniasis (Kala-Azar)**

##### **Overview**

In India, Kala-azar is endemic in Bihar, West Bengal, eastern part of UP and in newly created state Jharkhand with sporadic incidence. The incidence of Kala-azar in India is highest in the world (DALY's lost due to Kala-azar in 1990 were 6.8 million for men and 0.5 million for women; World Development Report, 1993). Nearly 80-90% of the Indian Kala-azar cases are being reported annually from Bihar alone.

## Operation Research Aspects

The likely areas for operational research to combat the disease include:

- Interruption of transmission through vector control by two rounds of DDT spray every year- First round during Feb-March and Second Round during May-June directly supervised from central level / independent agencies.
- Use of ITN nets and Environmental factors such as Mud plastering of cracks & crevices etc.
- Early case detection and treatment through existing health care system along with surveillance activities, strengthen diagnostic facilities and availability and recommendation of drug schedule at PHC level.
- Evaluation of Information, education and communication (IEC) and evaluation of its impact on health seeking behaviour.
- Capacity Building by training and orientation programmes.
- Sibling species on vectors of Kala-azar.
- To study positive organism of cutaneous leishmaniasis in Western part of India.
- Trial of new drugs / intervention of treatment of kala-azar, feasibility and effectiveness of newer diagnostic tests (RK3A) under field conditions.

## 6. Filariasis

### Overview

Filariasis is a chronic debilitating disease associated with disfigurement and social stigma. To achieve the goal of elimination of Lymphatic Filariasis by year 2015, the Govt. of India launched nationwide annual Mass Drug Administration (MDA) with annual single recommended dose of DEC tablets in addition to scaling up home based foot care and hydrocele operations. In 2005, all 20 endemic states/UTs except Tamil Nadu implemented MDA covering around 500 million population. On account of intensive advocacy drive from the highest level of the Govt. of India to the District levels and massive social mobilization, the coverage was 79.84%.

### Operation Research Aspects

- Development of sustainable community strategies for morbidity management of filarial lymphoedema in endemic areas.
- Development of strategies to eliminate the gap between distribution and compliance of drug distribution through MDA.



- To compare the efficacy and accuracy of strategies for monitoring the progress of LF elimination.
- Impact of MDA on prevalence and incidence of ADL, Lymphodema and hydrocele and to assess reversibility of disease manifestations especially in children after treatment .
- LF morbidity in pediatric age group in endemic areas
- Estimation of disease burden due to different types of filariasis

## **7. Malaria**

### **Overview**

The worst of the vector borne diseases still strikes up to 500 million people a year killing at least 2 million globally. In India around 2.8 million cases are being reported annually during the last 15 years. Experts opine that the figures are a gross underestimate. Increasing number of malaria deaths is a strong pointer towards worsening situation in malaria.

Over the years, the efforts of the Govt. of India and State Governments, the incidence of malaria has been brought down to below 2 million and deaths to below 1000 in 2004-05 from very high levels in the past. The most affected areas are NE states, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Andhra Pradesh, Maharashtra, Gujarat and Rajasthan, West Bengal and Karnataka, reporting about 80% of malaria cases and deaths. The malaria cases recorded in 2001 were 2.08 million with 1005 deaths. During 2006 the reported figure till May indicated total of 76,942 malaira cases and 37,163 pf cases with 29 deaths.

### **Operation Research Aspects**

- Developing strategy for optimizing the accessibility and utilization of national malaria control programme in endemic areas and to study the natural course of malarial infection.
- Evaluation of new drugs and Insecticides including larvicides in different ecological conditions in India.
- Monitoring of insecticide resistance of malaria vectors and study on effectiveness on rotation of insecticides.
- The paradigm approach for demonstration of control of malaria.
- Ecological succession of vector species in different epidemiological paradigm.
- Bioinformatics on malaria.
- Development of new tools and methods for diagnostic and control.
- Development of newer strategies to reduce no. of deaths due to malaria.

## 8. Dengue

### Overview

Dengue is one of the most serious and fast emerging tropical diseases which in certain socio-ecological settings exacts disease burden (465,000 DALYs across the globe) that can only be paralleled with that of malaria. Dengue, with its two severe clinical manifestations - Dengue Hemorrhagic Fever (DHF) and Dengue Shock Syndrome (DSS), poses an increasingly perilous situation due to lack of specific antiviral drugs or vaccine. Worldwide nearly 2.5-3 billion people (40% of the global population) continue to live at constant risk of contracting infection, while 50 million cases and 24,000 deaths are estimated to regularly occur annually in about 100 endemic countries worldwide, including hospitalization of nearly 500,000 cases of which 90% are children. The Southeast Asia region contributes 52% or 1.3 billion cases annually. India is one of the seven identified countries in the region regularly reporting incidences of DF/DHF outbreaks and seems to be heading to transform into a major hyperendemic niche for dengue infection in near future, with more and more newer areas being struck by the epidemic dengue.

### Operation Research Aspects

- Surveillance of dengue fever/dengue haemorrhagic fever and dengue shock syndrome, operationalising improved surveillance methods.
- Vector surveillance of dengue using GIS.
- Estimation of disease burden due to Dengue.
- In depth studies on *An. Alopictus* and *An. aegypti* on distribution in Rural and urban areas.
- C OMBI based for control.

## 9. Japanese encephalitis

### Overview

JE has been reported from many states in the country. Andhra Pradesh, Assam, Bihar, Haryana, Karnataka, Maharashtra, Tamil Nadu, Uttar Pradesh, West Bengal and Kerala have recorded repeated occurrences and outbreaks. During 2005, there was an epidemic outbreak in Uttar Pradesh which increased the total number of cases to 6727 and deaths to 1682. During 2006, so far 62 suspected cases of JE/viral encephalitis have been reported with 27 deaths (report up to May).



### **Operation Research Aspects**

- Virological surveillance in mosquitoes for vaccine virus strain in pre- and post Japanese encephalitis vaccine trial.
- Vector surveillance of JE using GIS
- Vaccine trial for newer JE vaccines.
- Field evaluation of Neem (*Azadirachta indica*) leaves and neem cake for the control of Japanese encephalitis vectors in rice agro-ecosystem.
- Trans-ovarian transmission of JE virus in vectors.
- Bio Ecological studies on vector in North Eastern States and parts of India where repeated outbreaks of JE are reported.

## **10. HIV/AIDS**

### **Overview**

Since the first report in India in 1986, HIV infection is currently documented from all parts of India. Currently it is estimated that there are 5.13 million persons living with HIV in India. Majority of HIV transmission in India is through heterosexual route. ICMR in its capacity as a nodal organization for medical research in India made major contributions towards understanding epidemic by supporting epidemiological, clinical and basic science research both within and outside ICMR institutes. While it would take some time for an effective vaccine or microbicide to develop, strengthening of care and treatment and prevention interventions programs can be of immediate benefit to the country.

### **Operation Research Aspects**

- Validation of size estimation and mapping
- To evaluate ART program for PLHA and in prevention of mother to child transmission study implications for HIV prevention.
- To develop newer behavior change strategy for preventing HIV acquisition and transmission at individual and group levels among high risk and vulnerable populations.
- To evaluate the impact of and test biomedical and social – behavioural HIV prevention intervention such as condom promotion, PTCT and VCTC.
- To develop newer communication strategies for HIV prevention messages and behaviour change models and programs.
- To evaluate and test the effectiveness of care, support and treatment interventions among the target populations from a gender perspective.
- Impact of reproductive health strategies on HIV /AIDS.

- To improve the delivery and standard of health services to PLHA and assess the skill base and training needs of health providers from both private and public sector, and of all types including those practicing ISM, in delivering HIV, SRH and other relevant services to PLHA.
- To review and revise M&E indicators for use in Indian context.
- To assess cost-effectiveness of antiretroviral therapy.
- To assess the cost-effectiveness of focused interventions in different 'at risk' sub-populations in India

## 11. POLIOMYELITIS

### Overview

After Smallpox, the next viral disease being targeted for eradication in India is Poliomyelitis. Poliomyelitis (or Polio for short) is in the final stages of eradication in India with very few cases occurring each year. However, there are other diseases and conditions which mimic Polio and must be ruled out in the final diagnosis. Also, as India moves towards the goal of eradication of Poliomyelitis, the importance of laboratory containment of wild polioviruses in the country becomes critical. This is because after the eradication of the disease from humans, the only source of the virus would be the laboratory.

### Operation Research Aspects

- **Post-polio eradication vaccination policy**
  - Evaluation of effectiveness of mOPV1 and mOPV3
  - Post eradication scenarios: occurrence of VDPV
  - Poliosurveillance in post –eradication years
- **Laboratory Containment of wild poliovirus stocks**

The Government of India has formed a Task Force for "Laboratory Containment of wild poliovirus in India" to ensure that wild poliovirus containing material and potentially wild poliovirus infected materials are identified and all unneeded stocks are destroyed using appropriate decontamination procedures. It is planned to enlist all bio-medical research and service laboratories and obtain information about possession of wild poliovirus infectious or potentially infectious materials. The laboratories holding stocks of wild poliovirus or potentially infectious materials will be advised to destroy these stocks. Laboratories wanting to retain such materials will be encouraged to shift the materials to National Repository at ERC or implement strict Bio-safety level 2 polio practices.



## 11. CHIKUNGUNYA

### Operation Research Aspects

- Networking of surveillance of Chikungunya virus.

### Budget required for Operational Research during 11<sup>th</sup> Plan in Communicable Diseases

#### (Budget in crores)

Tuberculosis	15 crores
Leprosy	12 crores
Diarrhoeal Diseases	10 crores
Vector Borne Diseases	5 crores
Leishmaniasis	6 crores
Filariasis	1.5 crores
Malaria	8 crores
Dengue	7 crores
Japanese Encephalitis	10 crores
HIV/AIDS	18 crores
Poliomyelitis	5 crores
Chikungunya	2 crores

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**Total 99.5 crores**  
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## NON-COMMUNICABLE DISEASES

### Overview

Noncommunicable Diseases (NCDs) are emerging as a major public health challenge for the developing countries including India. These are no longer regarded as the problems of the affluent societies. NCDs account for almost 60% of deaths and 47% of the global burden of disease. Seventy-five per cent of the total deaths due to NCDs occur in developing countries. In the Southeast Asian region, these diseases account for 51% of deaths and 44% of the disease burden.

The changes in the economic, social and demographic determinants of health are responsible for the observed changes in disease pattern. With an increased threat of adult chronic diseases in a backdrop of unabashed crisis of infectious diseases and environmental degradation, the prospects of human health in developing countries like India are shrouded with doubts.

NCDs are linked to a cluster of major risk factors such as tobacco use, unhealthy diets, physical inactivity, obesity, high blood pressure, cholesterol and glucose

levels that are measurable and largely modifiable. A cost effective preventive strategy will need to focus on bringing down the risk factors both in an individual and in population at large. However, a key factor, which hampers the development of such preventive strategies in developing countries like India, is the meager amount of the published literature on NCD incidence, prevalence and risk factors available from these countries. Precise studies are not available in India to estimate NCD related disease burden to enable proper area specific public health interventions.

The Division of Non Communicable Diseases at Indian Council of Medical Research supports multidisciplinary- basic, clinical and public health- research collaborations, both between the institutions in the country as well as with foreign institutions, related to NCDs. Unique opportunities are provided to investigators to plan, design and conduct investigations so as to develop health care strategies and tools that will benefit individuals, families, society and nation as a whole.

## ONCOLOGY

### Overview

During the year 2005, as per estimates by International Agency for Research on Cancer, an estimated 11.8 million persons would have developed cancer, with developing countries contributing about 6.3 million cases. Reliable information on occurrence of cancers is available from the network of cancer registries under national cancer registry programme of the Indian Council of Medical Research. Based on the data from population based cancer registries under this network, approximately 8 lakh persons develop cancer in India every year. The data shows that during the years 1999-2000, the age standardized incidence rates ranged between 97.8 and 119.8.3 per 100,000 men; and between 109.6 and 126.4 per 100,000 women in urban areas. The age standardized incidence rate in rural Barshi was 45.0 and 54.2 per 100,000 men & women, respectively. Cancers pertaining to tobacco related sites are common in the country. The common cancers among men are of lung & bronchus, stomach, oesophagus, oral cavity, pharynx, larynx, prostate & rectum. Cancer of cervix and breast are the commonest cancer among women followed by oral cavity, esophagus, ovary, & stomach. Incidence of cancer of gall bladder is high in Delhi & Bhopal. The data from the hospital cancer registries under NCRP shows that at the time of initial reporting, the disease has spread to regional tissues or metastasis in a large proportion of cases.

### *Operation Research aspects*

- Review the guidelines for management of buccal mucosa cancer & chronic myeloid leukaemia.
- Studies on replication of model developed for screening of cancers of cervix, breast and oral cavity.
- Development of a state of art laboratory for assessment of tobacco toxins to supplement the implementation of some aspects of tobacco control legislation;



provision of facts and information to the Government; helping in framing of rules for the tobacco control legislation.

- Studies on Human Papilloma Virus (HPV) and Cervical Cancer
- Role of Plain Pan Masala in Oral Precancerous Lesions
- Clinical Trials for Management of Common Cancers
- Initiate studies aimed at chemo-prevention of common cancers like that of oral cavity and cervix, using less expensive, indigenous Indian products.
- Identification of certain mid-point markers for such studies would also serve a useful purpose.

## CARDIOVASCULAR DISEASES

### Overview

Globally, ischemic heart disease (IHD) was the leading killer in age group  $\geq 60$  years, while with 1,332,000 deaths in adults aged 15 to 59 years IHD tracked behind HIV/AIDS only. With 6.8% and 5.0% of DALYs lost CAD and stroke were globally the second and third largest causes of disease burden in men aged 15 years and above in 2002. Even in women, CADs and stroke were the third and fourth main cause of DALYs lost worldwide. Of the 16.7 million deaths globally in 2002 due to CVDs, 80% are in developing countries. In 2002, India had the highest number of deaths (1,531,534) in the world due to coronary heart disease

Phenomenal advances have been made globally in cardiovascular disease related basic, clinical and population related research, including human genome sequencing, heart stem cell and beating heart muscle, but these advances have not yet made any impact on reducing burden of cardiovascular system related diseases in developing countries. It is to be noted that although 80% of the CVD deaths occur in developing countries, only 8% of the published literature comes from these countries. In order to meet CVD related health challenge, there is a need to undertake interdisciplinary research using modern analytical tools of cell and molecular biology, genetics as well as behavioral, clinical and public health research..

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### Operation Research aspects

- National Acute Cardiovascular Events (NACE) Registry: A Web Based National Network of Registry for Patients Hospitalized with Acute Cardiovascular Events
- Using Telemedicine Health Care Delivery for Cardiovascular Diseases in Remote Areas

## MENTAL HEALTH

### Overview

Mental and behavioral disorders represented 11% of the total disability adjusted life years (DALYs) in 1990 all over the world. It is predicted that this will increase to 15% by the year 2020. The data from epidemiological studies conducted in India has shown similar rates. About 2-3% of the population suffers from serious incapacitating mental disorders including epilepsy. Large number of adult patients (10.4-53%) attending out-patient departments are diagnosed as mentally ill. It has also been reported that there is slight increase in the psychiatric problems during the disasters like earthquake and tsunami in coastal areas of southern India. The ICMR has directed its research towards these issues during tenth plan period. This research has been instrumental in the improvement of treatment strategies, formulation of national programmes and intervention modules for health professionals.

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### Operation Research aspects

- Urban Mental Health Problems and their Service Need – Regional Profile
- Mental Health Needs Assessment & Service Delivery Models in Tsunami Affected Population of Coastal Tamil Nadu
- Drug Abuse and HIV/AIDS in North East India
- Assessment of emotional states and behavioural patterns, the prevalence of psychological symptoms and psychiatric disorders, coping mechanisms and response patterns, to identify the different levels of mental health care required, public perception about mental health services and to study the mental health service gap in earthquake affected areas of Gujarat.
- Urban Mental Problems and their Service needs in-depth study of epidemiology and health service research (HSR) of the common mental disorders (including syndromal and sub-syndromal) and stress related problems, development of a feasible mental health service delivery module for common mental disorders (CMDs) and stress related problems through primary health care providers and to develop an intervention module for victims of domestic violence.
- To study the role of psychiatric conditions with physical morbidity will be studied through cross-sectional and prospective studies.
- Research issues relate to prodromal stage identification, effectiveness of pharmacological and other interventions in severe mental disorders
- There is also need to formulate uniform guidelines to treat psychiatric patients in India. This will be carried out through training and study of the psychiatric at different locations in India.
- Health behavior research is concerned with finding out what people know, believe, think and feel about health and how such cognitive and affective bases are related to what they do.



- The knowledge, attitudes and practices to be studied in the psychiatric patients along with their relatives.

## DIABETES

### Overview

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action or both. The chronic hyperglycemia of diabetes is associated with long term damage, dysfunction and failure of various organs especially kidneys, nerves, heart and blood vessels. Diabetes mellitus is growing at an alarming rate all over the world particularly in India. It is estimated that there are currently 32 million people with diabetes in India which is projected to increase by 80 million in the year 2030. Increase in prevalence is rapid in urban areas from 2% in 1970s to 12% in 2000 and in rural areas also, it is beginning to increase. A Burden of Study undertaken by the Council reported that there were 21.4 million people with diabetes in urban and 16.4 million people with diabetes in rural areas of India in the year 2004. Recent advances in the research area indicate the involvement of gene environment interactions in progression of disease. New tools for screening non symptomatic individuals are evolved.

### Operation Research aspects

- To develop Registry of People with Diabetes in India with Young Age at Onset
- To undertake a population based, as well as, clinical based, to establish cost effective programs to (i) identify individuals at high risk who could benefit from preventive programmes, and (ii) successfully promote lifestyle change.
- To study the prevalence of pre diabetes in India with relative significance of IGT in Indian context and its correlation with Coronary Artery Diseases .
- To undertake a study on prevalence of complications of diabetes in people with diabetes so that interventions can be made at an appropriate time so as to improve the quality of life of person with diabetes.
- To undertake studies to see the beneficial effects of yoga in diabetic patients.
- Empowering people with sufficient knowledge and motivate to contact health personnel for seeking health care facilities. The identified areas for IEC should cover rural, tribal, semi-urban and urban populations with the existing health care systems.
- An effective surveillance system for monitoring the burden of disease.
- Association of malnutrition and Diabetes.

## GERIATRICS

### Overview

Demographic transition is changing age structure in India. Child population is decreasing, while working and elderly populations are increasing. The elderly population constitutes approximately 7% of the total population at present, which will increase to about 20% by the year 2050. This has direct implications at the individual, community, social and national level. Epidemiological transition along with demographic transition is changing health scenario, in which chronic non-communicable diseases (NCDs) may increase along with existing communicable diseases. Till now, no planned or sustained efforts were made to include the elderly in policies or to do the research on their specific problems. With the National Policy on Older Persons, a beginning has been made. The strategies for achieving a healthy elderly population need to be planned early and by targeting the younger groups. Overall aim of the research should be achievement of "Active and independent ageing", which means the people should lead productive and healthy lives without the support from others, as they grow old.

### Operation Research aspects

- Functional Status of the Indian Elderly needs to be studied.
- Studies for assessment of the burden and evaluate management of various neurodegenerative disorders, benign hyperplasia of prostate (including development of indigenous PSA marker), cardio-vascular autonomic dysfunction.
- To find out course and outcome of depression and sub-syndromal deficits and disabilities.
- Impact of various behavioural techniques for management of physical and mental impairment would be evaluated.
- To find out effect of various drugs from different systems of medicine, claimed or which have potential for delaying ageing process and improvement of memory.
- Health system models will be evolved to find out life style factors, health status, help seeking behaviour and health care services utilization in the elderly.
- Studies to evaluate effect of utilization of health care services on quality of life (QOL) are also proposed.



## Oral Health

### Overview

Oral health problems share many risk factor characteristics with wider general health problems and solutions such as health promotion and access to primary care for special groups including those dwelling in rural and remote areas, migrants, the aged and the deprived. The problems of improving oral health and providing better dental care warrant attention as public health issues since mouth is the portal of all infections. Accordingly, oral health issues need to be addressed on a priority footing like any other disease condition with concerted efforts to study the microbial genomics of pathogenic bacteria, mechanism of transmission of bacteria involved in dental caries and periodontal disease, risk assessment and management of dental caries, Identification of human genetic variations besides efforts to determine the efficacy and cost effectiveness of specific caries prevention regimens, research on guided tissue regeneration are some of the issues which may provide leads for early detection and management of various dental and oral diseases as relevant for India.

### Operation Research aspects

- Immunological Studies of Periodontal Diseases & Dental Caries
- To explore and correlate immune profile of individuals with various periodontal diseases and, dental caries, with the ultimate aim to develop immunological prognostic indicators.
- To develop a software for evolving treatment options of various dental diseases.
- Development of intervention studies for oral health promotion.

## OTHER DISEASES

### ASTHMA

#### Overview

Asthma is a common chronic inflammatory disorder and is characterized by airway hyperresponsiveness to a variety of stimuli. It is a multifactorial disorder, and is associated with complex interactions among inflammatory cells, mediators, airways, and possibly predisposing genes. The occurrence of this disorder is considered by many scientists to be on increase. Ethnic variations in India may play a role in differential effect of drugs for treatment of asthma.

## **Operation Research aspects**

Community based Asthma in different parts of the country is not known. Research studies are needed to fill the gaps in knowledge on aetiology as well as pathogenesis, in order to identify effective methods of intervention.

## **BLINDNESS**

### **Overview**

Blindness is a major health problem with cataract, glaucoma and trachoma affecting nearly 23 million people globally. Some of the causes like cataract and ocular infections have been studied by the council while other areas like glaucoma, diabetic retinopathy and degenerative diseases are now assuming importance. In most of the cases glaucoma can be treated and serious visual loss can be prevented. With the ageing population degenerative disorders like age related macular degeneration and diabetic retinopathy are assuming more importance.

### **Operation Research aspects**

- There are a variety of factors prenatal, natal and postnatal in addition to the hereditary factors, which play a major role in childhood blindness and it is proposed to initiate multicentric project to study the various aspects of childhood blindness for fulfilling program obligations.

## **LIVER DISEASES**

### **Overview**

The areas of Gastroenterology include disorders of the gastrointestinal tract, hepatic-biliary tree, pancreas, portal tract and spleen. Together this group of disorders has not been addressed due to their myriad presentations and co-existence in the same subject. The Global burden of diseases report (2002), shows that cirrhosis of liver as the 13<sup>th</sup> leading cause of death. According to the 1998 estimates of the USA, out of 44,667 deaths due to liver diseases, 25,192 were due to chronic liver diseases and cirrhosis. The remaining was attributable to the complications of the cirrhosis. These disorders show several important differences across geographic regions of the world and amongst various populations. There is no data on the burden of these diseases from our country. However, global advancements in basic science research, applied sciences, operational research and therapeutics have paved the path forward for us to act upon.



## Operation Research aspects

- Studies on the epidemiology of NAFLD and determination of its risk factors will be undertaken.
- Studies on understanding its pathogenesis and mechanism of injury in the liver will be useful to devise treatment and prevention modalities.
- An efficient diagnostic scheme would be required to screen persons with potential risk factors and monitor patients.

## NEPHROLOGY-UROLOGY

### Overview

There is an increasing awareness about renal ailments in India as a result of better diagnostic facilities available in the various parts of the country. Large number of small studies have indicated proteinuria, smoking, hypertension, hyperglycaemia, hyperlipidemia and activation of RAAS as important commonly observed factors for progression of kidney diseases. A new spectrum of renal disease related to HIV and co-infections are also being reported with increasing frequency in the Indian subcontinent.. However, inspite of all this realization there is still dearth of large scale data in India to provide a complete profile of the prevalence and incidence of various renal diseases in the country. Moreover, availability of a wide variety of pharmacologic molecules, and their use in systemic diseases such as musculoskeletal disease, cancer chemotherapy, infections, degenerative diseases have exposed the various compartments of the kidney such blood vessels, glomerulus tubulo interstitial compartment which in turn leads to disruption of the normal architecture which may be reversible or else develop transition to a chronic process with development of glomerulosclerosis, tubular ectasy, atrophy, interstitial fibrosis and marked increase in extra cellular matrix with fibrotic and sclerotic changes throughout the kidney. The clinical diagnosis may be easy in certain glomerular diseases but the histological diagnosis correlated with a good medical history of significant exposure to an offending agent or the co-existence of a condition can only help in the patient evaluation and their management. During the past , the Council has been funding only open ended schemes and fellowships in this area. Keeping the emerging disease problems in view, concerted efforts through Task Force approach are proposed in this area.

## Operation Research aspects

### Robotic Surgery:

- It is proposed to study and compare the use of Robotic Surgery with the existing surgical methods for various urological ailments.

## **SURVEILLANCE OF NON-COMMUNICABLE DISEASES**

### **Overview**

Noncommunicable diseases are on the rise, and cancer, cardiovascular diseases and diabetes are becoming serious concern, accounting for 52% of deaths and 38% of disease burden in the South East Asia Region (SEAR) of WHO. In India, NCDs are estimated to account for 53% of all deaths and 44% of disability-adjusted life years (DALYs). Based on current trends, it has been projected that these conditions would rise from 3.78 million in 1990 (40.4% of all deaths) to 7.63million in 2020 (66.7% of all deaths). This huge disease burden puts an enormous load on the health care infrastructure of our country. A recent report of WHO has estimated that India would have to forego about US\$ 250 million in the national income over the next 10 years in tackling these diseases. Noncommunicable diseases are insidious in onset and hence there clinical recognition is delayed considerably. It has now been well accepted that a group or cluster of 'risk factors' influence more than one non-communicable diseases. These have an important role in the causation of these diseases. These factors can be measured repeatedly using standard techniques and within ethical limits. The risk factors are also amenable to interventions and hence play a very important role in prevention of NCDs. Having efficient mechanisms of monitoring the disease patterns and emerging threats will be vital from a programmatic perspective.

### **Operation Research aspects**

- Establishment of National NCD InfoBase
- Prevention and Control of Noncommunicable Diseases
- In order to assist development of National programs on NCDs, model intervention packages will be required for community based actions. The following component activities would be required:
  1. Collection of information on the determinants of high risk behaviors for NCDs
  2. Undertake feasibility studies in the community on NCD prevention and control
  3. Assessments of health systems to undertake NCD prevention and control activities
  4. Develop integrated intervention strategies
  5. Undertake baseline survey of the NCD risk factors in selected geographic areas
  6. Pilot the intervention in these areas
  7. Assess the impact of intervention by re-surveying the same population
  8. Provide policy and planning relevant recommendations
  9. Family History as a Public Health Strategy for Prevention of Common NCDs



## DATABASE OF NON-COMMUNICABLE DISEASES

### Overview

The existing systems of death data collection in India have been inadequate for complete and authentic data. The Civil registration System registers only 36% of the total deaths in the country while the Medical Certification of Causes of Death is confined to urban settings. The Sample Registration System until recently did not have the expertise to capture all types of deaths. Untrained and unmotivated grass root level workers, inadequate health care facilities in remote areas and improper maintenance of hospital records has also resulted in the information gap. To improve the existing death data collection system, the RGI initiated the one Million Death study to analyze 300,000 deaths from 1998-2003 and 700,000 deaths from 2004-2014 to find the causes of the deaths. The analysis will involve tracking the health of 14 million people in 2.4 million households. Preliminary data from this study has shown that Verbal Autopsy techniques could be used for obtaining data on unreported deaths and would reduce the occurrence of misclassifications. The technique is able to identify cause of unregistered deaths by utilizing the health workers.

The Global Burden of Disease addressed the problems and limitations of traditional health statistics all over the world and provided a holistic assessment of global and regional health conditions in 1990. It provided comprehensive, internally-consistent estimates of mortality and disability and the burden of risk factors. The study estimated that in 1990 50 million people died worldwide with IHD causing more deaths than any other disease. 3.6 million of these lived in developing world. Cerebrovascular disease killed 3.0 million in the developing countries. Cancer, road traffic accidents and chronic obstructive lung disease also ranked within 10 major causes of death. Among cause of disabilities, depression, falls, alcohol, COPD, osteoarthritis ranked high. The major recommendation of GBD 1996 and 2000 was to encourage individual countries to take up a National Burden of Disease project to improve upon the GBD estimate and obtain country specific burden estimates.

### Operation Research aspects

1. Cause of Death by Verbal Autopsy
2. Assessment of Burden of Non-Communicable Diseases
3. National Center for Disease Informatics and Research
4. Development of a Comprehensive NCD Mortality Instrument
5. Development of a Feasibility Module on Cause of NCD Deaths in the Community
6. NCD Mortality Surveillance
7. Health Infrastructure Evaluation to Combat Growing Burden of NCD.
8. Economic Burden of NCD
9. Trauma Registry
10. Workplace Violence: Implementation of Preventive Programs

## **Social & Behavioral Research**

### **Overview**

Internalizing the Millennium Development Goals in our national development framework was a major challenge to the governments in developing concrete action plan to improve the well being of poor people and ill health, inequality and persistent poverty. As a result 10<sup>th</sup> plan draws time specific monitoring targets with the respective goals. Three of the eight goals concentrate on health (child mortality, maternal health, and AIDS, malaria and tuberculosis), but health also interconnects with the other goals, which focus on poverty and hunger, education, gender, the environment, science and technology, and water and sanitation.

Operation Research aspects:

- Gender Issues Affecting Health of Women Working in Unorganized Sectors
- Health Promotion Campaigns Targeting Vulnerable Groups

### **Initiatives in North-Eastern Region**

Operation Research aspects:

- *Mosquito Borne Diseases*
- Capacity building for research on HIV/AIDS in Nagaland and Mizoram
- Development of malaria control strategies in various epidemiological settings of NE India
- Filariasis control in tea garden set up: working towards elimination
- Effectiveness of syndromic approach in diagnosis of STIs
- Integrated biological and behavioural assessment in Drug abuse and HIV.



# ANNEXURES

WG 8

No. 2(16)/06-H & F.W  
Government of India  
Planning Commission  
(Health, Family Welfare & Nutrition)

Yojana Bhawan  
Sansad Marg  
New Delhi  
25<sup>th</sup> May, 2006

**ORDER**

**Subject: Working Group on Communicable & Non-Communicable Diseases for the Eleventh Five-Year Plan**

In the context of formulation of the Eleventh Five Year Plan (2007-12), it has been decided to set up a Working Group on Communicable & Non-Communicable Diseases under the Chairmanship of Director General Health Services, Ministry of Health and Family Welfare, Government of India, New Delhi. The composition of the Working Group will be as follows:

1.	DGHS, Ministry of Health & Family Welfare, New Delhi.	Chairman
2.	Representative, Dept. of Biotechnology, New Delhi	Member
3.	Secretary/Representative, Dept. of Science & Technology, New Delhi.	Member
4.	Sr. DDG (NCD), ICMR, New Delhi.	Member
5.	Addl. DG, NACO, Ministry of Health & Family Welfare, New Delhi	Member
6.	Sr. DDG (Communicable Diseases), ICMR, New Delhi	Member
7.	Dr.P. Krishnamurthy, DAMIEN Foundation Trust, Chennai.	Member
8.	Dr. K. Srinath Reddy, AIIMS, New Delhi	Member
9.	Shri A. Kumar, Director (H & FW) Planning Commission, N. Delhi	Member
10.	Shri.K.M.Gupta, Director, Ministry of Finance, New Delhi	Member
11.	Dr. Jacob John, Professor Emeritus (ICMR), Dept. of Virology Christian Medical College, Vellore	Member
12.	President, Indian Medical Association, New Delhi.	Member
13.	Director, PRERNA, Mumbai.	Member
14.	Director, SEWA, Ahmedabad.	Member
15.	Director, All India Institute of Hygiene & Public Health, Kolkata.	Member
16.	Dr. M.D. Gupte, Director, National Institute of Epidemiology, Chennai	Member
17.	Shri Gagan Sethi, Ahmedabad	Member
18.	Dr. B. Thankappan, Achuta Menon Centre for Health Sciences, Thiruvananthapuram	Member
19.	Dr. S. Jana, Associate Director, CARE India	Member



20.	Dr.S.Pattanayak, Former Director, NMEP, New Delhi	Member
21.	Dr.J.P.Gupta, Public Health Consultant, New Delhi	Member
22.	Director/Addl. Director, National Institute of Communicable Diseases, Delhi	Member Secretary

2. The terms of reference of the Working Group will be as under:


**(I) Communicable Diseases:**

- 1) To review the status of ongoing major disease control programmes w.r.t :  
-Objectives, strategies, plan initiatives, targets and outlays during 10<sup>th</sup> Plan.  
-Achievements, problems detected, midcourse correction, utilization of funds.
- 2) To give suggestions regarding proposed objectives, strategies, initiatives, targets for 11<sup>th</sup> Plan including issues of sustainability, overlapping/ duplication and verification  
- to improve efficiency and quality of services at primary/secondary/ tertiary level.  
-Funding requirements during the Eleventh plan.
- 3) In view of the above, identify priority areas for basic, clinical, applied and operational research during the XI Plan period.
- 4) To suggest mechanisms of involvement of NGO/ private sector/community/ local self government in implementation and monitoring the programmes proposed in the Eleventh Plan.
- 5) To review the current pattern of monitoring and evaluation of the existing programmes and suggest improvements during the Eleventh Plan.
- 6) To review the current status of HMIS, disease surveillance, its quality and utilization and propose improvement during the Eleventh Plan.
- 7) To deliberate and give recommendations on any other matter relevant to the topic

**(II) Non-communicable Diseases:**

- 1) To assess the estimated disease burden due to non communicable diseases, review the source of data, its accuracy, reliability and problems in making estimates, and suggest methods for improvement in the XIth Plan Period.
- 2) To review status of ongoing Central Sector/ Centrally Sponsored Disease Control Programme for non-communicable diseases and suggest mechanisms for developing and implementing a non-communicable disease prevention, detection and management programmes during the Eleventh Plan period through the primary, secondary, tertiary and super specialty levels in government, voluntary and private sector health care network.
- 3) Taking into account the increasing longevity and life style changes, suggest appropriate preventive strategies as well as diagnosis and management of NCD in the elderly in primary, secondary and tertiary care settings.

- 4) To review ongoing schemes for emergency medical relief, and accident and trauma services, and suggest methods for managing these at primary, secondary and tertiary care level.
  - 5) To identify priority areas for basic, clinical, applied and operational research during the Eleventh Plan period.
  - 6) To suggest mechanism for meeting health care costs for management of NCD at national, state, panchayati raj institutions and individual levels.
  - 7) To deliberate and give recommendations on any other matter relevant to the topic
3. The Chairman may form sub-groups and co-opt official or non-official members as needed. The Working Group will submit its report by 31<sup>st</sup> August, 2006.
4. Shri Ambrish Kumar Director (H & FW), Room no. 402, Planning Commission, New Delhi-110001 will be the nodal officer for all further communications.
5. The expenditure on TA/DA in connection with the meetings of the Working Group in respect of the official members will be borne by the parent Department /Ministry to which the official belongs as per the rules of entitlement applicable to them. The non-official members of the Working Group will be entitled to TA/DA as permissible to Grade I officers of the Government of India under SR 190 (a) and this expenditure will be borne by the Planning Commission.

  
(Ambrish Kumar)  
Director (H & FW)  
23096530  
(ambrish.kumar@nic.in)

To Chairman and Members of the Working Group.

Copy to:

1. PS to Deputy Chairman/MOS(Planning)  
/Members(KP)/(AS)/(VLC)/(BLM)/(BNY)/(AH)/ Member-Secretary, Planning Commission, Yojana Bhawan , New Delhi
2. All Pr. Advisers/Advisers/ HODs in Planning Commission,
3. Prime Minister's Office, South Block, New Delhi
4. Cabinet Secretariat, Rashtrapati Bhawan, New Delhi
5. US(Admin.I) / Pay & Accounts Officer/ Accounts-I-Section, Planning Commission / DDO, Planning Commission
- 6) Information Officer, Planning Commission

(Ambrish Kumar)  
Director (H & FW)



# **SUB-GROUPS OF WORKING GROUP ON COMMUNICABLE AND NON-COMMUNICABLE DISEASES**

<b>SUB-GROUP - 1:</b>		<b>COMMUNICABLE DISEASES GROUP</b>
Convenor	:	Dr P L Joshi, Director, NVBDCP
Members	:	Dr S Pattanayak, Ex-Director, NMEP
	:	Dr Jacob John, Professor (Emeritus), CMC, Vellore
	:	Dr Jotna Sokhey, Addl Project Director, NACO
	:	Dr Ashok Kumar, Director CBHI
	:	Dr D C Jain, Addl Director, NICD
	:	Dr L S Chauhan, DDG (NLEP)
	:	Dr G P S Dhillon, DDG (TB)
	:	Dr Lalit Kant, Sr. DDG/ Dr Deepali Mukherjee, Sr. DDG, ICMR
	:	Dr A P Dash, Director, NIMR
	:	Dr P K Das, Director, VCRC
	:	Dr M D Gupte, Director, National Institute of Epidemiology, Chennai
	:	Prof. A Nandi, School of Tropical Medicine & Hygiene, Kolkata
	:	Dr P Krishnamurthy, DAMIEN
	:	Dr Alok Mukhopadhyaya, VHA
	:	Dr A C Dhariwal, Joint Director, NICD
	:	Dr P Biswal, Asstt. Commissioner (Immunization)
	:	Dr Jagvir Singh, Joint Director, NICD
	:	Dr Avdhesh Kumar, Joint Director, NICD
	:	Dr D Bachani, NPO, IDSP, NICD
	:	Dr P K Srivastava, Joint Director, NVBDCP
	:	Dr C M Aggarwal, Joint Director, NVBDCP
	:	Dr Shampa Nag, National Consultant, WHO
<b>SUB-GROUP - 2:</b>		<b>NON-COMMUNICABLE DISEASES (NCD)</b>
<b>NCD SUB-GROUP-I:</b>		<b>EXISTING NATIONAL PROGRAMS (MENTAL HEALTH, CANCER &amp; BLINDNESS) WHICH ARE ALREADY RUNNING</b>
Convenor	:	Dr Rachel Jose, Dy Director General (O), Dte GHS
Members	:	Director, National Institute of Mental Health & Neuro Sciences, Bangalore
	:	Dr R Rastogi, Psychiatrist, SJH
	:	Dr K P S Malik, HOD, Ophthalmology, SJH
	:	Prof G K Rath, HOD, Radiotherapy, AIIMS
	:	Dr Sudhir Gupta, Chief Medical Officer (NCD), Dte GHS
<b>NCD SUB-GROUP-II:</b>		<b>PROGRAMS PROPOSED EARLIER e.g. CVD, DIABETES, STROKE &amp; INTEGRATED NCD PROGRAMME</b>
Convenor	:	Dr Bela Shah, Sr. DDG (NCD), ICMR
Members	:	Prof K Srinath Reddy, HOD, Cardiology, AIIMS
	:	Prof P H Ananthanarayanan, DDG (M), Dte GHS
	:	Prof Nikhil Tandon, AIIMS
	:	Dr Shah Hussain, CMO(SG), NICD



**NCD SUB-GROUP-III:**

Convenor

**NEW INITIATIVES**

Dr H C Goyal, Addl DG, DGHS

Members

Dr A K Agarwal, Dean, MAMC

Dr A K Singh, Ex-Director, CIO, Safdurjung Hospital

Dr T S Siddhu, Consultant &amp; Head, ENT, RML Hospital

Dr A N Sinha, CMO(HA), Dte GHS

Dr Jayaram, Director, AIISH, Mysore

Dr D Krishnaswamy, HOD, Geriatric Medicine, Madras Medical College

Dr Jagdish Kaur, CMO (JK), Dte GHS

Dr S P Agarwal, Vice President, Indian Dental Association

Dr Anil Kohli, President, Dental Council of India

Dr V K Sharma, Director, CIO, Safdurjung Hospital

Dr A K Singh, Consultant, Neurosurgeon, Fortis, NOIDA

Dr I C Premsagar, HOD, Neurosurgery, RML Hospital

Dr P Ravindran, Director (EMR), Dte GHS

Dr B D Athani, Director, AIIPMR, Mumbai

Dr R L Ichhpujani, DDG (P), Dte GHS, New Delhi

Dr Indira Chakravarthy, Director, AIH &amp; PH, Kolkata

Dr B K Tewari, Adviser (Nutrition), Dte GHS, New Delhi

Dr Narendra Kumar, DDG (Sr. Grade), ICMR

Dr Nasreem Shah, HOD, Dentistry, AIIMS

Dr Kabi, Dental Specialist, Safdurjung Hospital

Dr S Venkatesh, Joint Director, NICD









